

# Introduction to Innovation Project Management

## *Learning Objectives for Project Managers and Innovation Personnel*

- To understand the differences between traditional and innovation project management
- To understand that there are new skills, responsibilities, and expectations for managing innovation activities
- To understand the strategic/business importance of innovation
- To understand the importance of measuring innovation business value

## INTRODUCTION

---

*“The future is a direction, not a destination.”*

— Edwin Catmull

Over the past three decades, there has been a great deal of literature published on innovation and innovation management. Converting a creative idea into reality requires projects and some form of project management. Unfortunately, innovation projects may not be able to be managed effectively using the traditional project management philosophy we teach in our project management courses. Innovation varies from industry to industry, and even companies within the same industry cannot come to an agreement on how innovation project management should work. Part of the disagreement comes from the fact that there are several forms of innovation, each one with different characteristics and possibly requiring different tools.

It is inevitable that, over the next several years, professional organizations such as the Project Management Institute (PMI) will recognize the need to begin setting some standards for innovation project management and possibly partner with organizations, such as the Product Development and Management Association (PDMA), which offers a certification program related to innovation. There may also appear an Innovation Project Management Manifesto like the Agile Manifesto. The greatest innovation in the next decade may be the recognition and advancement of innovation project management as a specialized project management career path position.

There are differences between traditional and innovation project management. People have avoided using the words “innovation” and “project management” in the same sentence because of these differences. Even those organizations that offer certification in innovation practices do not use the words “project management.” There is limited research on examining the link between innovation and project management.

Innovation is often unstructured and requires people to utilize those portions of the brain that focus on free thinking, creativity, brainstorming, and alternative analyses. Project management, on the other hand, is very structured, with a well-defined scope, and often with a very low tolerance for any creativity or brainstorming that is believed to be out of scope.

There are several types of innovation, ranging from small, incremental changes to a product to totally new products and processes that are the result of a breakthrough in technology that disrupts the market. Incremental innovation may follow some of the standard project management processes. Radical or disruptive innovation may require playing by a different set of rules. All assumptions must be challenged, even if they appear in a business case. Innovation requires the identification of the right problems and thinking about elegant solutions. All of these factors may require that the organizational culture change.

## DEFINITIONS FOR INNOVATION

---

*“If you want something new, you have to stop doing something old.”*

— Peter Drucker

*“Innovation = Ideas + Execution + Adoption”*

— Jag Randhawa, *The Bright Idea Box: A Proven System to Drive Employee Engagement and Innovation*

There are conflicting views on what innovation means. Some people argue that innovation is standing in the future (rather than the present) and helping others see it. Another view of innovation (to paraphrase Martha Graham) states that innovation teams, and innovators, are not ahead of their time in what they see. They are in real time, and the rest of the world hasn't caught up to them yet because they are still focusing on the past.

There is no universally agreed-on definition for innovation, but two common definitions are:

1. Innovation is the transformation of knowledge or intellectual property into commercialization.
2. Innovation is not necessarily invention; it can be the creation of something new, as in a new application. Innovation is finding a new or better solution to market needs in a manner that creates long-term shareholder value. Externally, it is seen by customers as improved quality, durability, service, and/or price. Internally, it appears as positive changes in efficiency, productivity, quality, competitiveness, and market share.

To understand the difficulty in defining innovation, we will look first at the reasons for performing innovation:

- To produce new products or services with long-term profitable growth potential
- To produce long-term profitable improvements to existing products and services
- To produce scientific knowledge that can lead to new opportunities, better ways to conduct business (i.e., process improvements and business models), or improved problem solving

There are many forms of process innovation. Capturing and implementing best practices, whether project management or business related, is process innovation. Process innovation can also include changing some of the key operations such as in manufacturing to reduce cost, add business value, or speed up time-to-market. Process innovation overcomes the misbelief that innovation occurs only with technical solutions for designing a new product.

The output from strategic innovation can create sustainable business value in the form of:

- New products
- Enhancements in brand value
- Additional services
- Efficiencies and/or improved productivities
- Improvements in quality
- Reduction in time-to-market
- An increase in competitiveness
- An increase in market share
- New processes
- New technologies
- Reduction in labor or material costs
- Reduction in energy consumption
- Conformance to regulations
- New platforms
- New strategic partnerships or acquisitions

The long-term benefits of innovations include an increase in market share, greater competitiveness, greater shareholder satisfaction, and so on. Many of these outputs are not the traditional, tangible deliverables or outcomes that most project managers are accustomed to seeing. These outputs can be more business related and intangible. Therefore, deliverables may take on a new meaning during innovation.

There are several types of innovation that can be used for these products, services, and processes, each with unique requirements and different life-cycle phases. Therefore, there is no single path to innovation, making it impossible to establish a uniform approach for all types of innovation projects.

Today, academia is differentiating between R&D and innovation. R&D departments are usually needed for breakthrough innovations that generally involve new technologies. If the R&D group develops a new technology or a new way of doing something that is substantially different from the way it was done before, then it could be turned over to the innovation team to find applications.

## THE BUSINESS NEED

---

*“Vulnerability is the birthplace of innovation, creativity, and change.”*

— Brene Brown

*“Normal is where innovation goes to die.”*

— Richie Norton, *The Power of Starting Something Stupid: How to Crush Fear, Make Dreams Happen, and Live without Regret*

Global business is susceptible to changes in technology, demographics, a turbulent political climate, industrial maturity, unexpected events, and other factors that can affect competitiveness. Taking advantage of these changes will be challenging. Companies need growth for long-term survival. Companies cannot grow simply through cost reduction and reengineering efforts that are more aligned to a short-term solution. Also, companies are recognizing that brand loyalty accompanied by a higher level of quality does not always equate to customer retention unless supported by some innovations.

According to management guru Peter Drucker, there are only two sources for growth: marketing and innovation (Drucker 2008). Innovation is often viewed as the Holy Grail of business and the primary driver for growth. Innovation forces companies to adapt to an ever-changing environment and to be able to take advantage of opportunities as they arise. Companies are also aware that their competitors will eventually come to market with new products and services that will make some existing products and services obsolete, causing the competitive environment to change. Continuous innovation is needed, regardless of current economic conditions, to provide firms with a sustainable competitive advantage and to differentiate themselves from their competitors.

The more competitive the business environment, the greater the investment needed for successful innovation. Companies with limited resources can take on strategic business partners and focus on co-creation. Co-creation innovation project management can

result in faster time-to-market, less risk exposure, greater customer satisfaction, a greater focus on value creation, and better technical solutions (DeFillippi and Roser 2014). With co-creation, the project manager must learn how to manage group diversity not just of race, religion, ethnic background, or sex, but also the diverse personal interests in prestige, benefits they might gain, and the degree of importance attached to the project.

Investors and stockholders seek information on the innovation projects in the firm's pipeline. This gives them an indication of possible success in the future. Influential stockholders and stakeholders can put pressure on innovation activities by asking for:

- Shorter product development life cycles
- An increase in product competitiveness
- Faster time to market
- Execution with fewer resources
- Higher performance requirements than the competitors
- Better product quality

Stockholder pressure to shorten development time must not be at the expense of product liability.

For years, project management and innovation management were treated as separate disciplines. Innovation requires an acceptance of possibly significant risk, fostering of a creative mindset, and collaboration across organizational boundaries. Innovation management, in its purest form, is a combination of the management of innovation processes and change management. It refers to products, services, business processes, and accompanying transformational needs whereby the organization must change the way they conduct their business. It includes a set of tools that allow line managers, project managers, workers, stakeholders, and clients to cooperate with a common understanding of the innovation processes and goals. Innovation management allows the organization to respond to external or internal opportunities, and use its creativity to introduce new ideas, processes, or products (Kelly and Kranzburg 1978). It requires a different mindset than the linear thinking model that has been used consistently in traditional project management practices. Innovation management tools allow companies to grow by utilizing the creative capabilities of its workforce (Clark 1980). However, there are still industries and types of projects that require linear thinking.

Project management practices generally follow the processes and domain areas identified in the Project Management Institute's *PMBOK® Guide*.<sup>\*</sup> Strategic innovation follows other processes such as strategizing, entrepreneurship, changing, and investing (de Wit and Meyer 2014). But now, companies are realizing that innovation strategy is implemented through projects. Simply stated, we are managing our business as though it were a series of projects. Project management has become the delivery system for innovation, but only if the rigidity of some project management processes is removed. Without some degree of flexibility, creativity and brainstorming may suffer.

Today's project managers are seen more as managing part of a business rather than managing just a project. Project managers are now treated as market problem solvers and

---

<sup>\*</sup>PMBOK is a registered mark of the Project Management Institute, Inc.

expected to be involved in business decisions as well as project decisions. End-to-end project management is now coming of age. In the past, project managers were actively involved mainly in project execution, with the responsibility of providing a deliverable or an outcome. Today, with end-to-end project management, the project manager is actively involved in all life-cycle phases including idea generation and product commercialization. The end of the project could be a decade or longer after the deliverables were created.

For decades, most project managers were trained in traditional project management practices and were ill-equipped to manage many types of innovation projects. Projects with a heavy focus on achieving strategic business objectives were managed by functional managers. Project managers handled the more operational or tactical projects and often had little knowledge about strategic plans and strategic objectives that required innovation activities. Project management and innovation management are now being integrated into a single profession, namely, innovation project management (IPM), whereby project managers are provided with strategic information. Project managers are now the new strategic leaders. IPMs now focus heavily on the long-term business or strategic aspects rather than the operational aspects that encourage a mindset of “getting the job done.”

Several years ago, a Fortune 500 company hired consultants from a prestigious organization to analyze its business strategy and major product lines, and to make recommendations as to where the firm should be positioned in 5 and 10 years, and what it should be doing strategically. After the consultants left, the executives met to discuss what they had learned. The conclusion was that the consultants had told them “what” to do, but not “how” to do it. The executives realized quickly that the “how” would require superior project management capabilities, especially for innovation. The marriage between business strategy, innovation and project management was now clear in their minds.

Figure 1-1 illustrates how strategic planning was often seen in the C-suite. All the boxes in Figure 1-1 were considered important, except often not the last box, namely the implementation of the strategy. Therefore, senior management did not see the link between project management and strategic planning activities because it was not recognized as part of their job description. Project management is now recognized as the delivery system by which an organization meets its strategic business objectives. If innovation activities are required, then project managers must undergo training in innovation project management.

Innovation project management is now being recognized as a career path discipline that may be more complex and challenging than traditional project management practices. Innovation projects have a high degree of risk because of the unpredictability of the markets, unstable economic conditions, and a high impact on human factors that may force an organization to change the way that it does business (Filippov and Mooi 2010). Innovation project managers may need a different skill set than traditional project managers.

Organizations need the ability to manage a multitude of innovation projects concurrently to be successful, and therefore innovation project management is being supported by corporate-level portfolio management practices. IPM cannot guarantee that all projects



**Figure 1–1.** Traditional Strategic Planning Activities.

will be successful, but it can improve the chances of success and provide much-needed guidance on when to “pull the plug,” reassign resources, and minimize losses.

## INNOVATION LITERATURE

---

There exists an abundance of literature on innovation. One of the reasons for this is that competitiveness is increasing the number of business objectives, thus mandating more innovation (Crawford, Hobbs, and Turner 2006). Some of the literature focuses on empirical studies, whereas other publications address mainly traditional product innovation. However, some of the projects that may appear as sole product innovation may have significant complexity and include multiple innovations. Examples would be the design of Boeing’s 787 Dreamliner (Shenhar et al. 2016), the Opera House in Sydney, Australia (Kerzner 2014), the Iridium Project, the Construction of Denver International Airport, and Disney’s theme parks (Kerzner 2017). Because of the divergent nature of innovation from industry to industry, there are publications that focus on industry-specific innovations such as the auto industry (Lenfle and Midler 2009), the pharmaceutical industry (Aagaard and Gersten 2011), the manufacturing industry (Calik and Bardudeen 2016), and the construction industry (Ozohorn and Oral 2017; Brockmann et al. 2016). These publications also address academic studies toward finding solutions to innovation problems.

Some researchers try to add structure to innovation by identifying categories of innovation according to elements such as complexity, life-cycle phases, levels of risk, strategic business importance, and information available (Garcia and Calantone 2002; O'Connor and Rice 2013). There are also articles that question whether such classifications are realities or myths because to date there is no consistent definition for innovation (Frankelius 2009).

There is also a human behavior side to innovation that appears in the literature. Examples include the ability to motivate people involved in innovation project management (Pihlajamma 2017) and reducing the tension and stress created by innovation ambiguity (Stetler and Magnusson 2014).

## PROJECT MANAGEMENT LITERATURE

---

There exists a plethora of literature on project management. Unfortunately, most of the literature focuses on linear project management models with the assumption that “one size fits all.” While this may hold true in some industries and for some projects, the concept of “one size fits all” does not apply to projects involving innovation.

Today, more than ever before, companies are realizing that business strategy, including innovation needs, is being implemented using project and program management concepts (Lenfle 2008). Although project management has matured into a strategic competency for some firms, not all project managers possess innovation management skills. What is missing in the literature is articles that identify innovation competencies that project managers must possess as well as articles that bridge the gaps between innovation, project management, and business strategy. There is no simple model in existence that bridges these gaps. But what most articles seem to agree on is the need to manage innovation for sustained performance.

Traditional project management is often seen as standardized processes for planning, scheduling, controlling, and sometimes risk management. The standardized processes are based on rigid policies and procedures that everyone must follow regardless of the unique characteristics of the projects. Some people regard traditional project management as obedience to regulations, policies, and authority (Geraldi et al. 2008).

The discipline of traditional project management may not work well when innovation is required. Project managers need flexibility in their ability to select the appropriate tools for their projects and customize the processes to fit the needs of the projects. This holds true even for many projects that do not require innovation. The future for some types of innovation and for some industries will be flexible project management models such as those used in Agile and Scrum projects.

Some industries still have requirements and a valid need for traditional project management practices. But there is a change taking place. “Managers need to recognize the type of project at the start, resist institutional pressure to adapt traditional ‘rational’ approaches to all projects and apply an appropriate approach—one tailored for the type of project.” (Lenfle and Loch 2010). Traditional project management does not distinguish between types of projects. Articles are appearing in the literature that propose a methodology to classify projects to guide the design of a suitable project management

model (Geraldi et al. 2011). Even with flexible project management approaches, there may be issues such as those identified by Coombs et al. (1998):

Thus we have seen that the literature suggests that there may be a need for different project management styles according to a number of distinguishing characteristics between innovations. The major distinctions are the level of technological uncertainty, the extent to which the technology is novel to the firm, the extent to which the technologies and products involved cause market disruption, and the size and complexity of the product or system involved. The implication here is that one generic model would lead to an over simplified view of project management. However, it is also clear that all these dimensions, if combined in all their possible permutations, could lead to the generation of a large and unwieldy number of different possibilities for project management styles. There is therefore a need for a compromise between the inflexibility dangers of 'one-best-model', and the excessive costs of tailoring project management approaches for each project. (p. 177)

## INNOVATION BENCHMARKING

---

Literature on innovation and project management does not always provide enough information for companies to improve their innovation practices. Many firms find benchmarking to be the best approach. Benchmarking is part of the continuous improvement process whereby we recognize that others, such as those considered as best in class, might be better at doing something and we wish to learn how to equal and/or surpass them. We measure the gap between us and the reference organization and decide how to compress it.

Benchmarking is more than just looking at products or services or the forms, guidelines, templates, and checklists that others are using. Benchmarking also promotes an understanding of the business processes, the business model under investigation, and the firm's strategy and strategic objectives. This knowledge is critical for continuous improvements for innovation activities.

There are several types of benchmarking activities. The two most common are process and strategic benchmarking:

- *Process benchmarking* focuses on critical steps such as the components of a project management methodology.
- *Strategic benchmarking* analyzes the strategies and core competencies used to create products and services.

In traditional organizations, project managers and the PMOs are usually active in performing process benchmarking. In highly innovative organizations, the focus is on strategic benchmarking.

Several years ago, a division of a Fortune 100 company decided to perform project management process benchmarking against their competitors in the same industry. At the end of the benchmarking process, management patted itself on the back, stating "Boy, are we good compared to our competitors."

After the gloating period was over, the PMO decided to benchmark against world-class project management organizations that were not in their industry. The results showed that the firm was quite poor in their project management capabilities. Recognizing the need for action, the company created the position of vice president for innovation. The VP's role was to perform strategic benchmarking against any company in the world that would share information and discover what best practices could be brought into the company as part of a continuous improvement effort. This included capturing best practices on innovation management.

## VALUE: THE MISSING LINK

---

*“Innovation is the creation and delivery of new customer value in the marketplace.”*

— Michael J. Gelb, *Innovate Like Edison: The Success System of America's Greatest Inventor*

The literature most commonly identifies three reasons for innovation: to produce new products or services for profitable growth, to produce profitable improvements to existing products and services, and to produce scientific knowledge that can lead to new opportunities or problem solving. But what about the creation of business value? Both innovation and project management literature are now stressing the importance of business value creation as the true measure of success.

The ultimate purpose of performing innovation activities should be the creation of long-term, sustainable shareholder value. Value, whether business or shareholder, may be the most important driver in innovation management and can have a profound influence on how we define success and failure. Suitability and exit criteria must have components related to business value creation. Examples include the following:

- Innovation suitability criteria:
  - Similar technology
  - Similar marketing and distribution channels
  - Can be sold by the current sales force
  - Purchased by the existing customer base
  - Fits company philosophy, profit goals, and strategic plans
  - Can be produced within current production facilities
- Innovation exit criteria:
  - Unexpected occurrences and uncertainties
  - An update or improvement in processes
  - Industry and market changes
  - Demographic changes

However, it must be realized that financial value is just one form of value. Other forms of value appear in Figure 1-2.

### Some Components of a Firm's Values



**Figure 1–2.** Forms of Value.

Any company can make financial numbers look good for a month or even an entire year by sacrificing the company's future. Companies that want to be highly successful at innovation should resist selecting board members who focus mainly on financial numbers. From a strategic perspective, the primary goal for innovation should be to increase shareholder value over the long term rather than taking unnecessary risks and trying to maximize financial value in the short term.

There can be primary and secondary types of values created. As an example, a company creates a new product. This could be a primary value to the firm. If the company must modernize its production line to manufacture the product, then the modernization efforts could be a secondary value that could be applied to other products.

While the goal of successful innovation is to add value, the effect can be negative or even destructive if it results in an unfavorable cultural change or a radical departure from existing ways of doing work. The impact that innovation can have on the way that a firm runs its business is often referred to as disruptive innovation. We must remember that many process innovations result in disruptive changes to the processes and the way we conduct business rather than sales. The failure of an innovation project can lead to demoralizing the organization and causing talented people to be risk-avoiders rather than risk-takers.

There are numerous case studies and theories on product innovation, but not from the perspective of the project manager. In this book, we will focus on the challenges faced by project managers involved in innovation projects, and the solution to some of the challenges.

Project management is the delivery system for innovation. Project management makes innovation happen. Innovation project management (IPM) is more than creating inventions and technology. It is a way to compete and run a business in an everchanging environment. With IPM, we act proactively rather than reactively, and offensively rather than defensively. With IPM, we recognize that best practices that were captured in the past with traditional project management may be of little value if we use them to rest on our laurels.

## INNOVATION TARGETING

---

*“Our wretched species is so made that those who walk on the well-trodden path always throw stones at those who are showing a new road.”*

— Voltaire, *Philosophical Dictionary*

*“Throughout history, people with new ideas—who think differently and try to change things—have always been called troublemakers.”*

— Richelle Mead, *Shadow Kiss*

Successful innovation must be targeted, and this is the weakest link because it requires a useful information system and knowledge about the company’s long-term business strategy. Creating the business strategy requires the interactions shown in Figure 1-3.

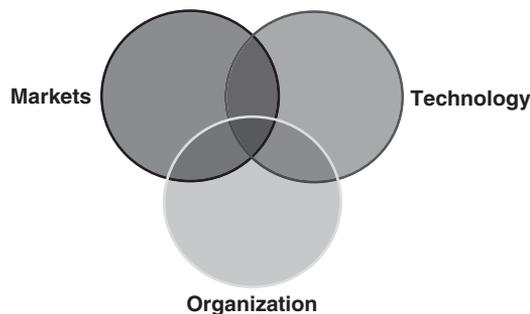
The organization identifies the need for innovation and provides funding and competent people with the necessary skills. Marketing provides insight about consumers’ needs and what they might be willing to pay for the product or service. Marketing also provides insight into what market segments should be targeted. Innovations require technology.

In the past, business needs focused on repetitive tasks, improving efficiencies, and productivity. There was a heavy focus on these factors:

- Profitability
- Elimination of variations
- Maintaining authority through command and control
- Overreliance on utilization of business metrics
- Six Sigma to improve quality

Today, we face challenges and crises due to competition, unstable economies, disruptive technologies, and sustainability. “Business as usual” is no longer an option. “We will build it and they will come” does not work. We must be willing to break away from traditional thinking. There are greater risks, but greater opportunities. We must work closely with our customers using prototypes or risk that the idea will be a loser.

### Three Critical Innovation Interactions



**Figure 1-3.** Three Critical Interactions for Innovation.

We must focus on long-term spending, which requires the answering of critical linkage questions:

- In what direction should we grow?
- Should we change our image and, if so, what should it be?
- How well do we understand the customers' needs and wants?

We must listen to the voices: the voice of technology and the voice of the customers. Three questions must be answered:

- What do the customers need?
- What will they pay for?
- What value will they receive?

## TIMELINE FOR INNOVATION TARGETING

---

*“Implementing best practice is copying yesterday; innovation is inventing tomorrow.”*

– Paul Sloane

Although we cannot establish the exact date when innovation will happen, we must still consider the need to somehow recover our innovation costs. This is shown in Figure 1-4.

Innovation targeting must include reasoned expectations for possible outcomes, break-even timing, and cash flow generation. Of course, market conditions can change, forcing the acceptance of the exit criteria.

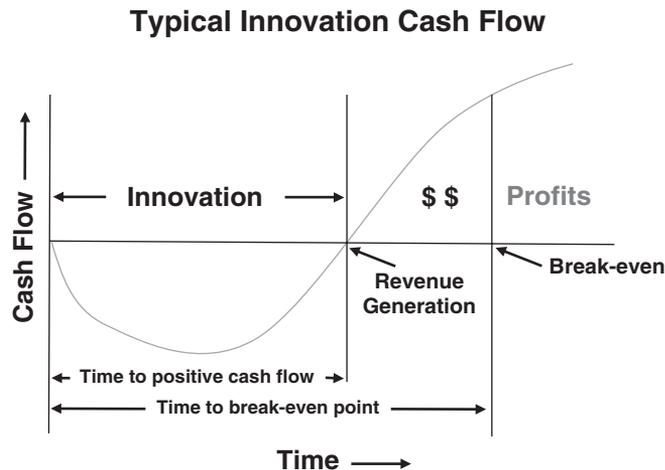


Figure 1-4. Typical Innovation Cash Flow.

## INNOVATION IN SMALL COMPANIES

---

There is a common misconception that innovation occurs only in large companies. However, Tidd and Bessant (2013, 69) believe that small companies tend to have more innovation than large companies. They identify advantages and disadvantages for small companies. The advantages include:

- Faster decision making
- More of an informal culture
- Higher-quality communications
- Shared and clear vision
- Flexible and agile structure
- Entrepreneurial environment
- Acceptance of more risks
- Passionate about innovation
- Good at networking

The disadvantages include:

- Lack of a formal earned value measurement control system
- Poor cost and schedule control
- Perhaps a lack of qualified resources or their availability
- Focus on short-term strategy above long-term strategy
- Poor risk management

Large companies can finance a multitude of projects, often more than they need to, accept a great deal of risk, and write off millions of dollars in innovation project failures. Small companies cannot afford this luxury and therefore work on fewer projects, especially those with a higher probability of success. Small companies often perform better at innovation than large companies because a failure of as little as one project could have a significant impact on the business.

## SEVEN CRITICAL DIMENSIONS FOR SCALING PROJECT MANAGEMENT INNOVATION

---

If project management and innovation are to be “married” with the goal of creating a synergistic organic organization, then it should be obvious that organization change will be needed and that it begins at the C-suite who are the architects of the organizational

---

This section was provided by Dr. Al Zeitoun, PMP. Dr. Zeitoun, Global Business Strategist, is an organizational transformation and operational excellence expert with global experiences in strategy execution, operational excellence, portfolio, program, and project management. His experience includes serving on PMI’s global board of directors, PM Solutions president, Emirates Nuclear Energy Corporation executive director, Booz Allen Hamilton portfolio management leader, and International Institute for Learning’s chief projects officer. He can be reached at zeitounstrategy@gmail.com. © 2018 by Al Zeitoun. Reproduced with permission.

culture. Dr. Zeitoun describes the seven critical dimensions for project management innovation scaling:

1. *The role of executive leadership.* One of the most critical dimensions for projects success over the years has always been executive support. The way by which that tier of organizational leaders champions projects, sponsors the cause of their mission, and provides the necessary backing to the project managers and their teams tends to consistently make the difference between success and failure. In scaling innovation, more and more organizations are finding that it is critical to start at the top. Boards of directors and executive leaders of the future are not going to be sitting around a fancy table in order to steer the ship. They are going to play a very different role. They are becoming a working group and their number one role will center on changing the business for the better, improving, innovating, and strengthening the excellence of execution that comes from innovative project management. Boardrooms are becoming workrooms with white boards all around and are becoming the place where the right degree of risk is taken every day to ensure that organizations of the future use and execute projects more creatively.
2. *The achievement of the right balance between alignment and autonomy.* Innovation in project management requires a good degree of autonomy. In the everchanging dynamics of today's workplace, teams are fortunately becoming more self-directed. This is advantageous, and even a necessity, for enhancing the chance for creativity, the flow of ideas, and the assurance that the teams will produce the innovations needed for the approach taken to run projects. The key becomes finding the right balance. Specifically, we do need alignment across project teams, but with a light hand; it should be just enough to ensure the right focus on the project's goals and the anticipated benefits. The road to get there is enriched by the autonomy, and the more the teams are authorized to chart their own course, the better the innovation opportunities will be.
3. *The development of the innovation culture.* Without the safety that is needed to innovate, organizations miss out on the right amount of innovation enablement. The culture to support innovation in project management must be adaptive. No longer would a classic view of the slow buildup of phases of a given project be suitable for generating and testing the best ideas. Much higher iteration would be needed. Teams must be encouraged to take risks and the organization must have a high tolerance for mistakes that can occur at a higher rate than ever before. Fail fast and learn will become part of the new DNA of most organizations. The learning culture that this creates is priceless. This appetite for risk taking and the courage that is required to fail and learn is the new normal. Executive leadership will play a big role here too, as they will have to walk the talk frequently and will have to use a high level of emotional intelligence to manage the stress related to the risk taking required. Leaders will have to relate to their project managers differently to instill a new sense of trust.
4. *The use of projects as innovation labs.* More than any time in history projects will become the best opportunity to innovate. By nature, projects are designed to change the business. They are no longer merely operational activities. They now enable a change from a current state to a future state. The right organizational focus will be looking at projects as labs to test innovation in all dimensions. Innovation will

include selecting the right mix of team members, experimenting with the right balance of virtual and collocated teams, testing new ways of working, experimenting fast with outcomes, innovating the use of data analytics in making faster and more effective decisions, and sensing very differently while engaging with the customers often and fast for best creative outcomes.

5. *The development of future innovation competencies.* As we look ahead to 2030 and beyond, collaboration is becoming the top competency of the future project managers. This directly links with success in innovation. No longer will the project manager of the future be focused on controlling the work. The time spent in reporting, policing, or managing conflicts, will be replaced with a different set of priorities. Amongst these top priorities will be the role of a coach. This will be fundamental in allowing the autonomous teams to experiment fast, try new ideas, and execute more dynamically, while the project manager guides, integrates, connects the dots, and creates the opportunities for the enhanced and continual exchange of innovative ideas.
6. *The need to block off time to think again.* If there is one dimension that will support innovation in projects the most, it would be this one. Noise has been the main challenge and even a roadblock in accomplishing project work for the last 20 years. We have continued to focus on new techniques for managing projects, gotten ourselves into increasingly busy work schedules, mastered the hype around getting things done, all without giving ourselves the chance to make reflection part of our daily routine. We have got to find a way to think again about constructive change management opportunities. Blocking off daily calendar time to reflect on what we have learned directly strengthens the innovative muscles we need to plan and execute our projects differently. Without that ability to be holistic again and see things from the right distance via continual reflection, we would struggle to enable new innovative habits and the associated flow of creativity in our project work.
7. *The new ways of working.* The workplace of the future is here and is not! It is becoming obvious that what we have been accustomed to does not lend itself to the right degree of innovation. The silos of the physical space, the organizational verticals, and the rigid views, all must be broken down, and quickly. We have been reflecting that in the changing physical design of our offices, in the ways we create the small teams, running daily scrums, or collaborating differently. For innovation to flow, this way of working needs to be like a river. It must flow smoothly. Ideas must envision no barriers, fast execution will have to be encouraged, and seamless access will be key. This requires us to adapt and continually welcome the changes needed for the way we work as we welcome machine intelligence and use Internet of Things to connect us in ways we never thought possible.

As innovation in project management continues to drive the priorities in the C-suite, these seven critical dimensions for scaling innovation show a natural cascading effect, from the intelligent messages and guidance of the executive leadership, to the elements required for igniting the hearts and motivation of adaptive teams, and finally to executing faster while getting things done innovatively, and finding new opportunities for improving and operating with excellence.

## IMPLICATIONS AND ISSUES FOR PROJECT MANAGERS AND INNOVATION PERSONNEL

---

Project managers that are asked to manage innovation projects must understand that the environment they must now work in can be significantly different than the traditional environment. Some of the critical issues and challenges that may be new for some project managers include:

- Benefits of success may appear differently than in traditional project management.
- A focus on long-term rather than short-term thinking might be needed.
- There might need to be heavy focus on alignment of the project and decision making toward business strategy and strategic business objectives.
- Many of the team members may be made up of consumers and partner organizations, especially if co-creation is being used.
- Project managers may be expected to make a significant number of business decisions.
- There are differences between traditional and innovation project management.
- Innovation project management is a strategic competency.
- There is a linkage between IPM and strategic planning.

Many of these issues will require new tools and a new way of thinking. Some of these issues may be managed using traditional processes based on where the project resides in the investment or product life cycle.

## REFERENCES

---

- Aagaard, A. and Gertsen, F. (2011). Supporting radical front end innovation: perceived key factors of pharmaceutical innovation. *Creative Innovation Management* 20, 330–346, <http://dx.doi.org/10.1111/j.1467-8691.2011.00609.x>.
- Brockmann, C., Brezinski, H. and Erbe, A. (2016). Innovation in construction megaprojects. *Journal of Construction Engineering Management* 142(11):040160591. DOI: 10.1061(ASCE)CO 1943 - 7862.00011168.
- Calik, E. and Bardudeen, F. (2016). A measurement scale to evaluate sustainable innovation performance in manufacturing organizations. 13th Global Conference on Sustainable Manufacturing, 449–454.
- Clark, C. H. (1980). *Idea Management: How to Motivate Creativity and Innovation*. New York: AMACOM.
- Coombs, R., McMeekin, A. and Pybus, R. (1998). Toward the development of benchmarking tools for R&D project management, *R&D Management* 28, (3), 175–183.
- Crawford, L., Hobbs, B. and Turner, J. R. (2006). Aligning capability with strategy: Categorizing projects to do the right projects and to do them right. *Project Management Journal* 37 (2), 38–50.
- De Wit, B., and Meyer, R. (2014). *Strategy: An International Perspective* (5th ed.) Andover, MA: Cengage Learning.

- DeFillippi, R. and Roser, T. (2014). Aligning the co-creation project portfolio with company strategy, *Strategy and Leadership* 42 (1), 30–36. DOI 10.1108/SL-10-2013-0075.
- Drucker, P. F. (2008). *The Essential Drucker*. New York: HarperCollins.
- Filippov, S. and Mooi, H. (2010). Innovation project management: A research agenda. *Journal on Innovation and Sustainability*.
- Frankelius, P. (2009). Questioning two myths in innovation literature. *Journal of High Technology Management Research*, 20 (1), 40–51.
- Garcia, R. and Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: A literature review. *Journal of Product Innovation Management* 19 (2), 110–132.
- Geraldi, J. G., Maylor, H. and Williams, T. (2011). Now, let's make it really complex (complicated): A systematic review of the complexities of projects. *International Journal of Operations and Production Management* 31 (9), 966–990.
- Geraldi, J. G., Turner, J. R., Maylor, H., Söderholm, A., Hobday, M., and Brady, T. (2008). Innovation in project management: Voice of researchers. *International Journal of Project Management*, 26 (5), 586–589. DOI: 10.1016/j.ijproman.2008.05.011.
- Kelly, P. and Kranzburg, M. (1978). *Technological Innovation: A Critical Review of Current Knowledge*. San Francisco: San Francisco Press.
- Kerzner, H. (2017). *Project management case studies*, 5E. Hoboken, NJ: John Wiley and Sons; 255–286, 467–506 and 583–654.
- Kerzner, H. (2018). *Project management best practices; Achieving global excellence*, 4E. Hoboken, NJ, John Wiley and Sons; Chapter 19.
- Lenfle, S. (2008). Exploration and project management. *International Journal of Project Management* 26 (5), 469–478.
- Lenfle, M. and Loch, C. (2010). Lost roots: How project management came to emphasize control over flexibility novelty, *California Management Review* 53 (1), 32–55.
- Lenfle, M. and Midler, C. (2009). The launch of innovative product related services: Lessons from automotive telematics. *Research Policy* 38 (1), 156–169.
- O'Connor, G. C. and Rice, M. P. (2013). A comprehensive model of uncertainty associated with radical innovation. *Journal of Product Innovation Management*. 30, 2–18.
- Ozohorn, B. and Oral, K., (2017). Drivers of innovation in construction projects, *Journal of Construction Engineering and Management*, 143 (4), 1-9, DOI: 10.1061/(ASCE)CO.1943-7862.0001234.
- Pihlajamma, M. (2017). Going the extra mile: Managing individual motivation in radical innovation development. *Journal of Engineering and Technology Management* 43, 48–66. DOI: 10.1016/j.jengtecman.2017.01.003.
- Shenhar, A. J., Holzman, V., Melamed, B. and Zhao, Y. (2016, April-May). The challenge of innovation in highly complex projects: What can we learn from Boeing's Dreamliner experience? *Project Management Journal*, DOI: 10.1002/pmj.21579, 62–78.
- Stetler, K., L. and Magnusson, M. (2014). Exploring the tension between clarity and ambiguity in goal setting for innovation, *Creativity and Innovation Management* 24 (2), 231–246.
- Tidd, J. and Bessant, J. (2013). *Managing Innovation: Integrating Technological, Market and Organizational Change* (5th ed.). Hoboken, NJ: John Wiley and Sons.