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WHITE PAPER

2019

CULTIVATING BUSINESS & FUNCTIONAL KNOWLEDGE IN PROJECT MANAGERS

PROJECT TEAM

TEAM LEAD: Ritu Singh | Vishwadharmi K. Sharma

TEAM MEMBERS: Anita Ganesh | Husain Mansur | Zoya Fatehally | Abir Biswas | Srinivas Haritsa

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INTRODUCTION

With organizations getting more technology oriented, IT projects have become key to the successful running of the business. Project planning and execution must therefore be based on a keen understanding of the business. And only those project managers who speak the client's language and are familiar with industry developments can inspire confidence.

The project manager of the future is one who has a combination of business, functional, and domain knowledge, besides technical expertise. This emerging requirement is in line with the PMI Talent Triangle® that prescribes technical, leadership, and strategic management skills as an ideal combination of skill sets for a project manager.

Domain knowledge refers to business and industry knowledge, and functional and technical knowledge.

Business and industry knowledge pertains to knowledge about the environment in which businesses operate for example:

- Business and industry trends
- The competitive landscape
- Common acronyms used
- Business and revenue models
- Value chain and supply chain, and
- Business strategies

Functional and technical knowledge pertains to knowledge of concepts and business processes such as:

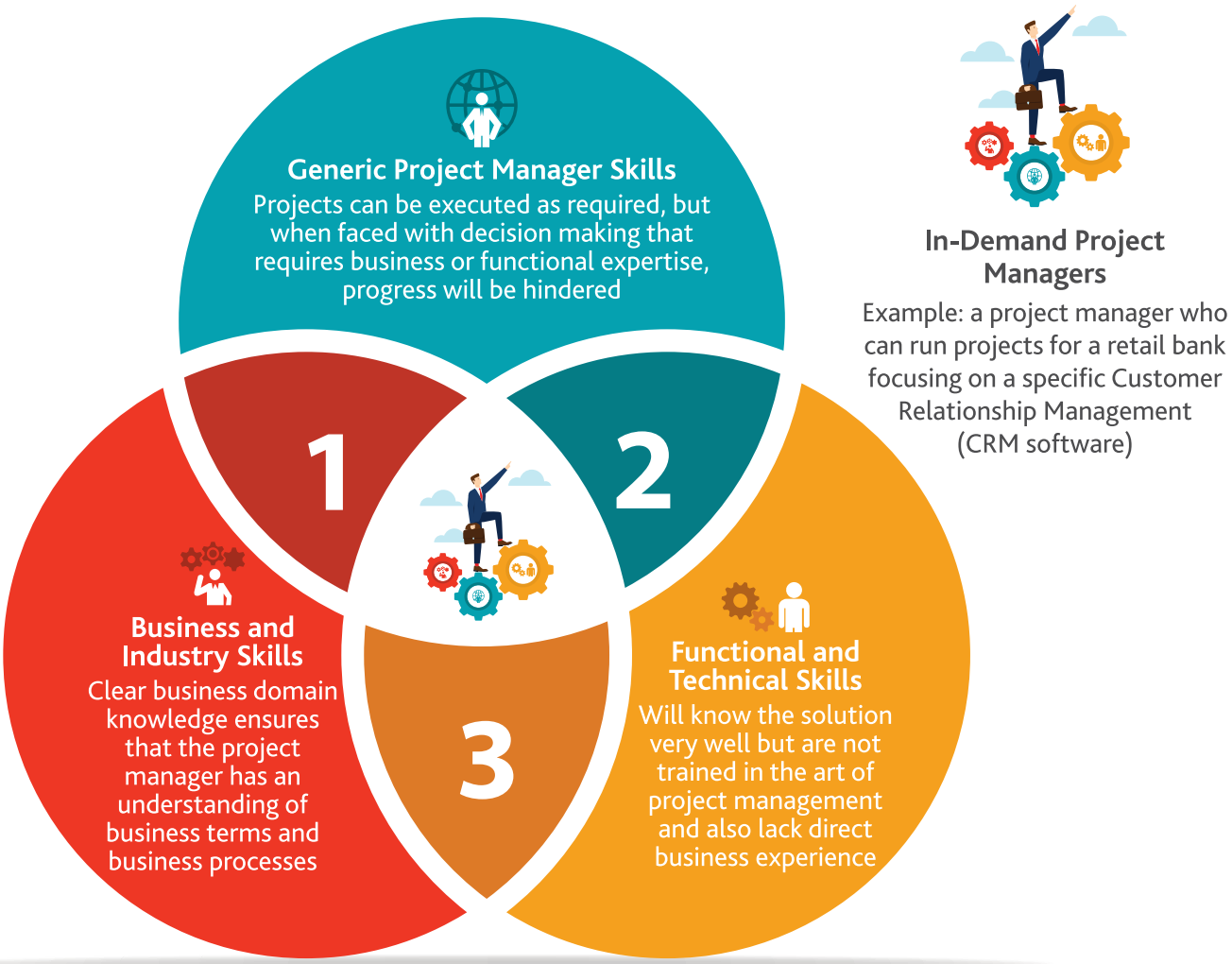
- Procedures and processes
- Functionalities and best practices
- Current and trending technologies, and
- Products and applications

A study carried out by PMI India's Excellence Enablers Forum (EEF) among senior managers in IT organizations in India showed that domain knowledge is in short supply among project managers. The EEF study identifies it as one of the key competency gaps to be addressed on priority.

This white paper identifies the level of domain knowledge necessary across a project team, and recommends snackable strategies that practitioners can adopt to address any current gaps and what organizations and PMI can do support them. It takes the help of a sample organization to explain how these challenges and recommendations will work in the real-world.

STUDY FINDINGS

SKILL CIRCLES OF PROJECT MANAGERS

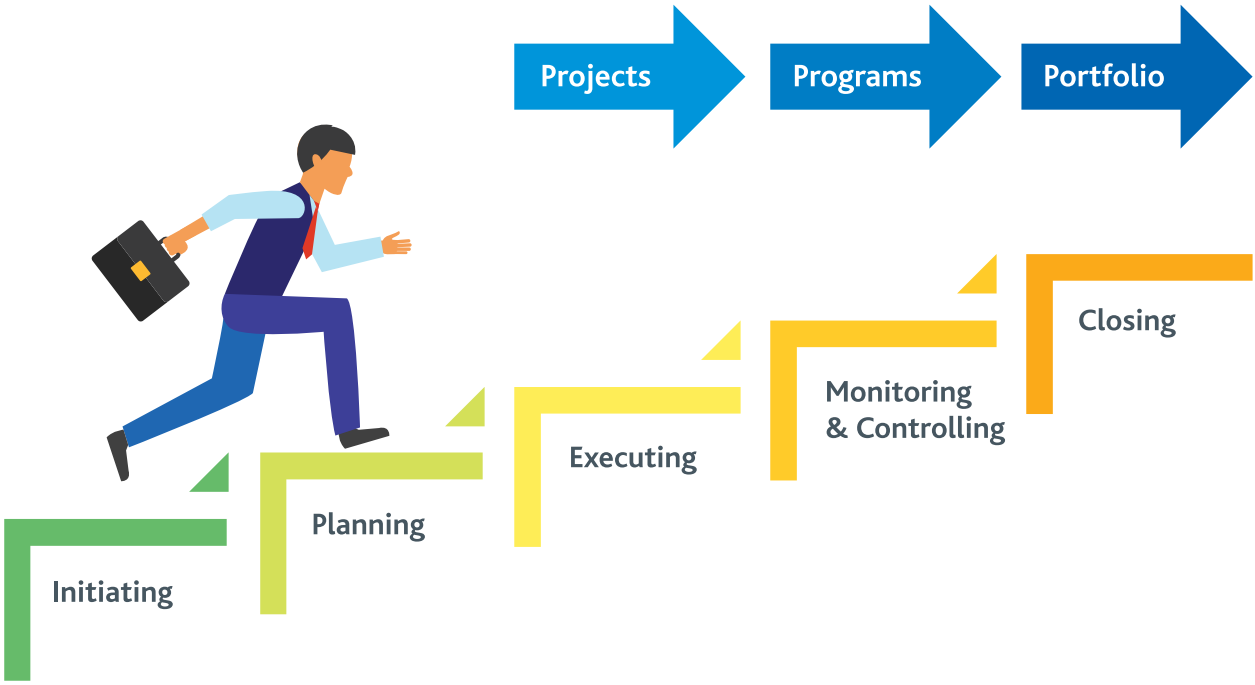


As shown in the above figure, the PMI Project Management Competency Development Framework has revealed that domain knowhow is one of the major skills required for the success of a project

(Click here to know how the sample organization identified the in-demand project manager.)

Application of Domain Knowledge

Domain knowledge is required across all phases of a project, program, or portfolio. Illustrated below are a few project aspects where a person with domain knowledge plays a critical role:



Project Execution

- Define clear business needs with the customer/project sponsor
- Validate the requirements and deliverables, and help refine and determine feasibility, correctness, and completeness of end-user requirements
- Provide recommendations for procedural improvements/change requests
- Review requirements traceability matrix and ensure that requirements have coverage
- Provide input for the design and construction of test cases and business scenarios

Stakeholder and Team Management

- Accurately represent the business units' needs to the project/program team
- Provide input for and/or create and execute user documentation and training material
- Obtain or provide approval for changes to rules, processes, and policies
- Understand the client-specific language and terms
- Be the "go-to" person for any questions or issues within his/her area of expertise

Project Manager Skill Requirements

The EEF study captured the current requirements in organizations as far as generalist and specialist skills go. Do project managers need comprehensive knowledge or niche skill sets?

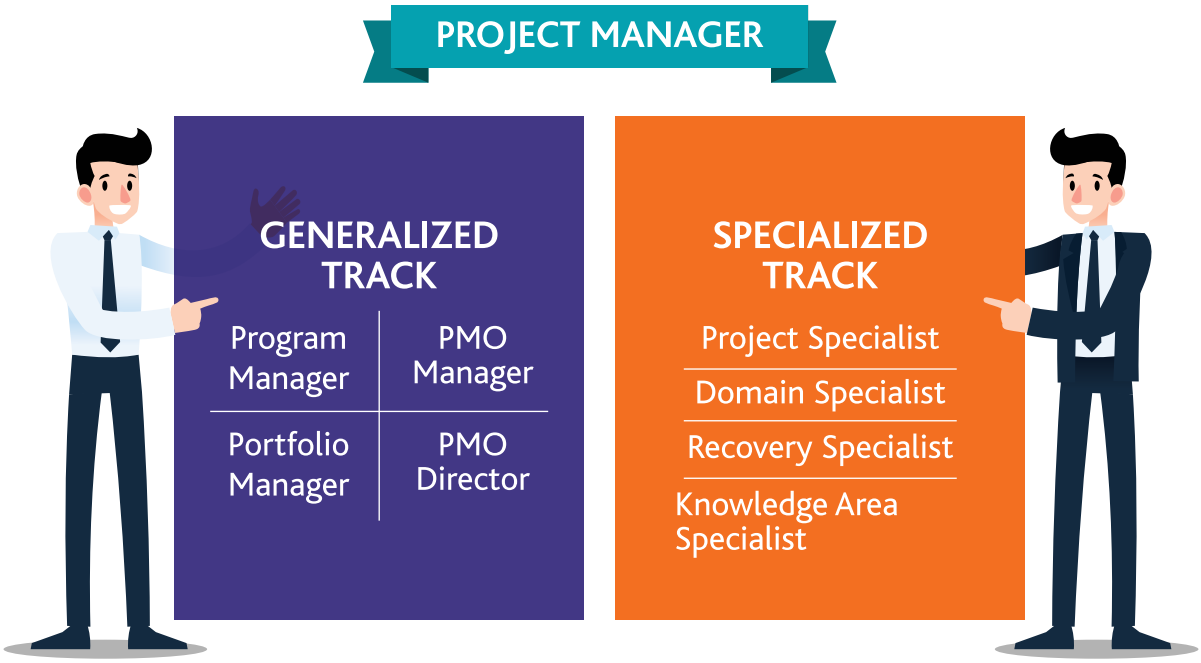
The demand for domain expertise has led to the creation of the following project management roles in the industry:

Dual project manager: Gaining popularity is the hybrid project manager who can perform the role of a project manager and a domain expert

Project manager teaming up with domain subject matter expert (SME): A project manager who can make accurate estimations and plan for potential risks with inputs from the SME throughout the project lifecycle.

(Click here to know the type of project manager the sample organization selected.)

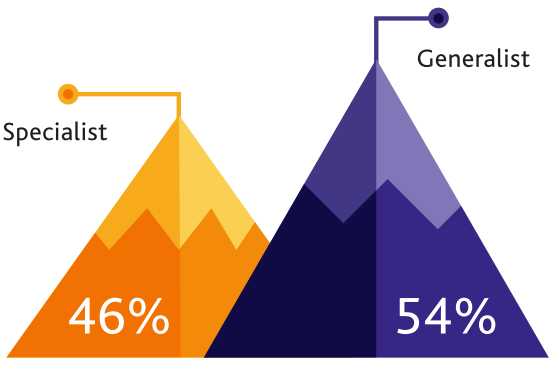
TYPES OF PROJECT MANAGERS



The study revealed that there is currently an almost equal split between generalist and specialist project managers, but specialized tracks are gaining in popularity.

The survey also indicated that a majority of organizations support the cultivation of domain knowledge in their employees.

This survey supports the PM Tracks



Desirable Domain Proficiency Levels

The survey also captured the levels of knowledge of client business, business and industry skills, and functional and technical skills desirable for the project manager and project team members to succeed. The levels were categorized as below:

DOMAIN PROFICIENCY LEVELS

SUBJECT MASTER

Handles end-to-end projects in relevant domain. Considered a role model/coach/ expert. Has general project experience plus in-depth domain experience

SUBJECT MATTER EXPERT

Independently manages nearly all types of projects in relevant domain. Has had training/ certification. Has at least 2 years of diverse project experience

PROFESSIONAL (General experience)

Knowledge to independently execute diverse assignments/ projects. Has relevant training and experience

FOUNDATION (Knowledge based)

Has foundation level or basic understanding. No domain knowledge

The survey covered 8 project types and based on the survey findings, the study team has identified the following domain proficiency levels for project managers and project team members for various project types

Type of project	PROJECT MANAGER			PROJECT TEAM		
	Knowledge of client business	Business / Industry skills	Functional / Technical skills	Knowledge of client business	Business / Industry skills	Functional / Technical skills
Application support / Managed services	●	●	●	●	●	●
Design-build	●	●	●	●	●	●
Migration	●	●	●	●	●	● ●
Package implementation	●	●	●	●	●	●
Product engineering	●	●	●	●	●	● ●
Infrastructure project	●	●	●	● ●	●	●
Testing project	●	●	●	●	●	● ●
Research project	● ● ●	● ●	●	● ●	● ●	●

● SUBJECT MASTER ● SUBJECT MATTER EXPERT ● PROFESSIONAL ● FOUNDATION

Click here to see the project type

Challenges in Cultivating Domain Knowledge

So what are the reasons behind gaps in this competency development? The survey respondents pointed to the following major challenges in cultivating domain knowledge even when the required ecosystem and organization support are in place.

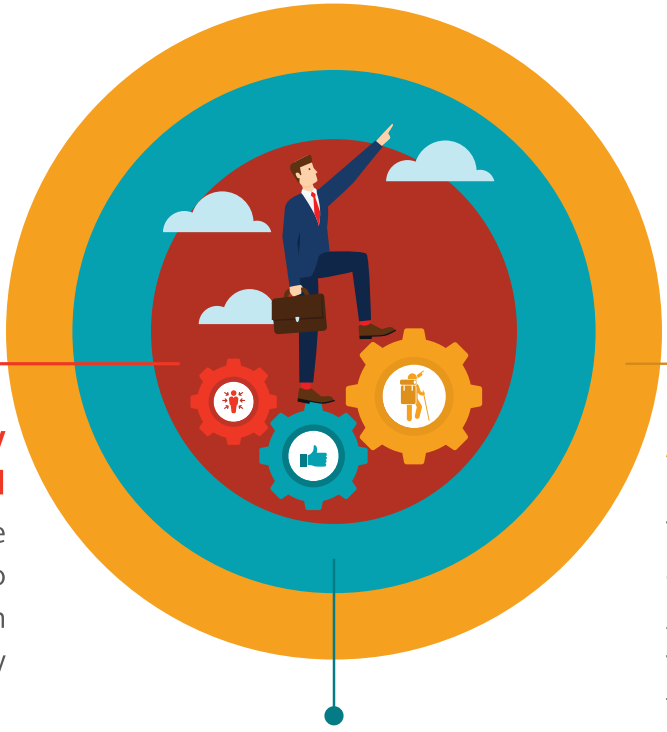
RECOMMENDATIONS

After collating the survey findings and analyzing the results, the EEF team has made the following recommendations to improve the level of domain knowledge in project managers.

Develop a Winning Combo

Projects managers must focus on developing this winning combination of soft skills to enhance their relevance.

THE WINNING ATTITUDE



SELF AWARENESS / MOTIVATION

The ability to recognize and choose what to learn and to learn it quickly

ADVENTUROUS SPIRIT

The ability to accept the elements of uncertainty /ambiguity while venturing into unknown territories to learn

ENVIRONMENT TO LEARN

The ability to recognize and choose what to learn and to learn it quickly

Devise Snackable Strategies

For each of the key challenges identified by the EEF research, below are some easy-to-implement strategies that project managers can adopt.

1

SELECT A NICHE

It is easy to get overwhelmed by the vastness of information available on any domain. Select a niche area depending on your interest and motivation level, and the environment to learn.

2

STAY RELEVANT

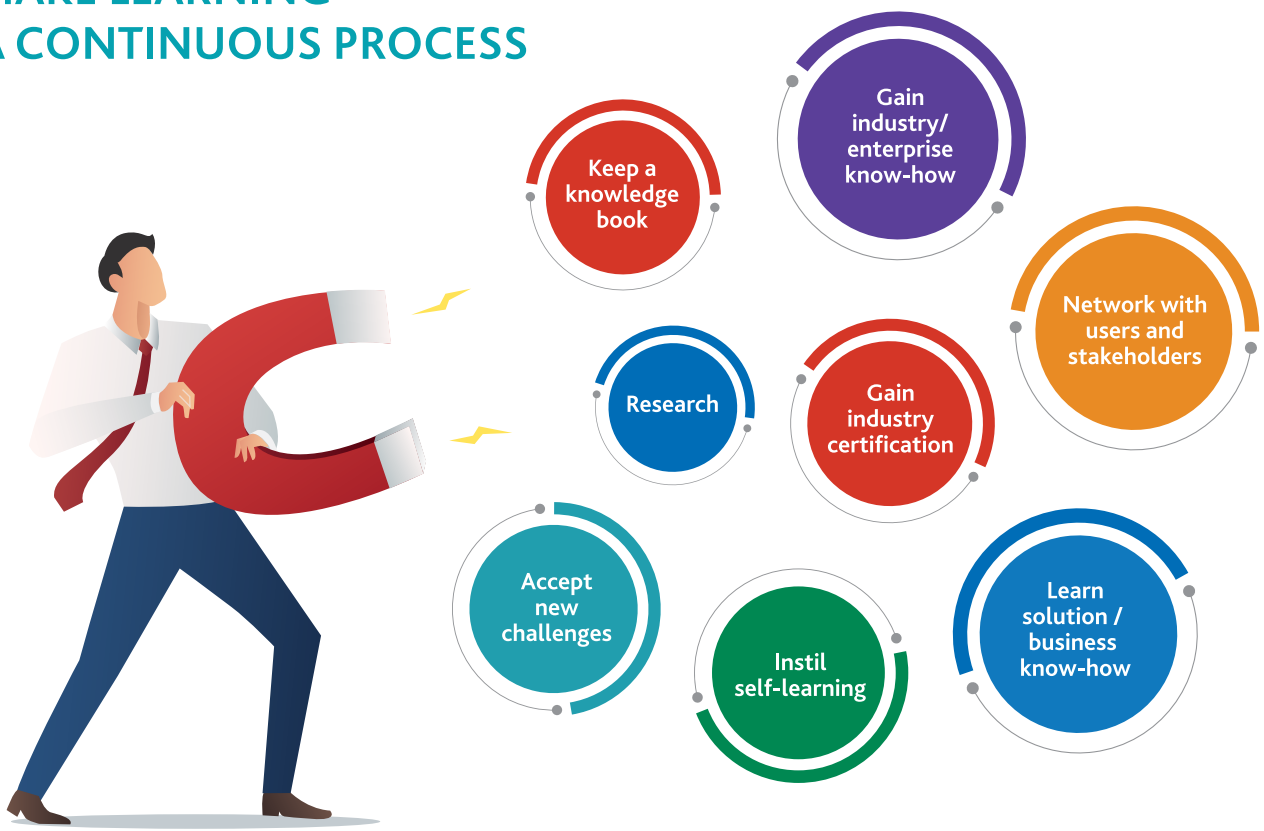
Attend industry networking forums and speak to industry leaders so as to learn, unlearn, and discard, depending on what is relevant and what is not. Have open discussions with peers, seek mentors in your industry, and look for industry certifications.

3

RIGHT ATTITUDE

Attitude change is easier said than done but it's extremely important to have an open mind while venturing into new areas and accepting new challenges. Make self-learning your life-long motto.

MAKE LEARNING A CONTINUOUS PROCESS



Along with core project management skills, the need of the hour is to bring in industry skills, business skills, functional skills, and technical skills in the selected domain, combined with an attitude to learn and explore.

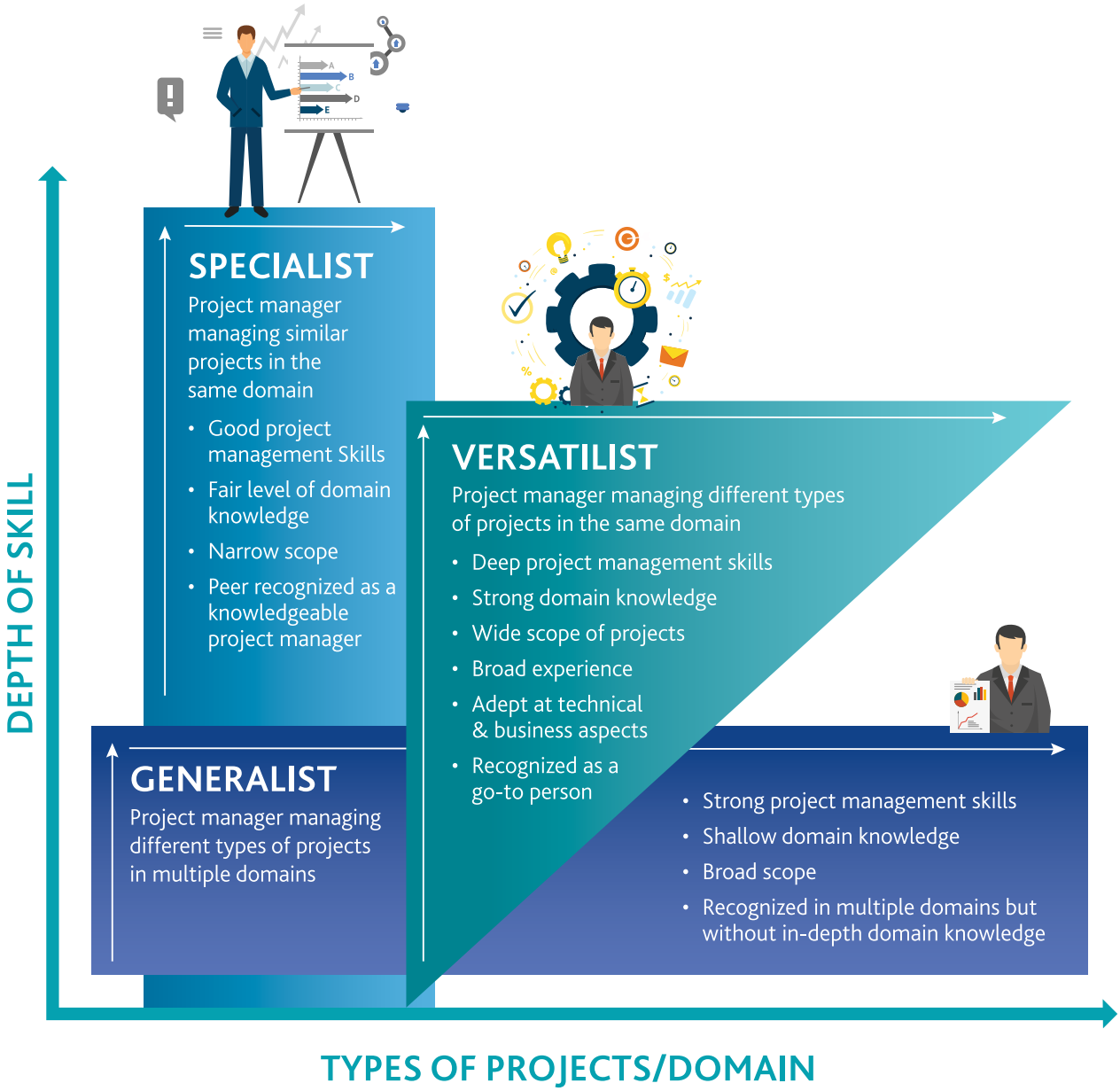
Be a Versatilist

The question is not whether a project manager needs to be a generalist or a specialist, but whether he or she can juggle the two. The project manager of the future is one who can easily navigate both, and be a versatilist. The diagram below explains the skills that will make a project manager a versatilist

(Click here to know why the sample organization selected a versatilist for its key IT project)

DEPTH OF SKILL & DOMAIN KNOWLEDGE

Today the industry is geared towards specialization, with in-depth knowledge in varied types of projects in one or more domains



Source: This framework originates from Gartner, an American IT research and advisory firm - http://slideplayer.com/slide/8163050

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BRIDGING SKILLS GAPS. STAYING RELEVANT.

Project management has to adapt to the changing expectations of clients and other stakeholders. The onus is primarily on project managers to understand their current gaps in competencies and take the necessary steps to address those. Organizations must encourage and support project managers as they navigate this unfamiliar environment. Support from PMI needs to be in the form of awareness building and knowledge creation.

PROJECT MANAGERS

- Look for new challenges and opportunities
- Develop the attitude for self-learning
- Pursue on-the-job training
- Register on knowledge-enhancement sites
- Attend webinars
- Gain domain certifications

ORGANIZATIONS

- Create a new baseline for self-assessment and growth
- Provide incentives to build domain knowledge
- Formulate domain-level metrics for every project
- Conduct organization-driven training programs
- Introduce industry-recognized certification programs
- Set up centers of excellence for domain knowledge
- Create a knowledge repository
- Promote trainings, webinars, conferences among employees
- Organize mindshare sessions
- Share industry experiences through internal sessions

PMI

- Create domain knowledge repositories
- Form industry-specific interest groups, organize conferences
- Provide certifications to create an industry benchmark
- Endorse existing industry credentials/certifications
- Publish case studies on domain-centric project management
- Conduct domain-specific webinars
- Host domain-specific knowledge on the website
- Share industry experiences through smaller sessions

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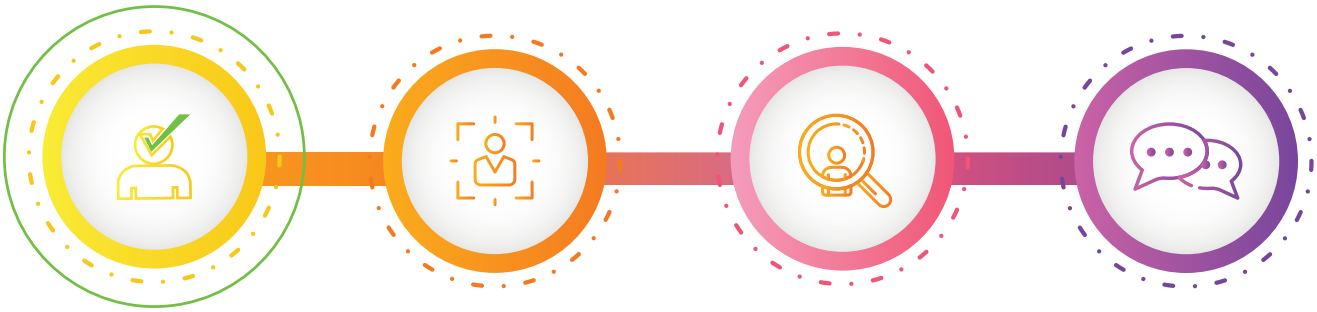
APPENDIX

Project Objectives



Confirm

the postulate that domain knowledge positively impacts project success.

Identify

factors/challenges to easily cultivate business and functional knowledge in project managers.

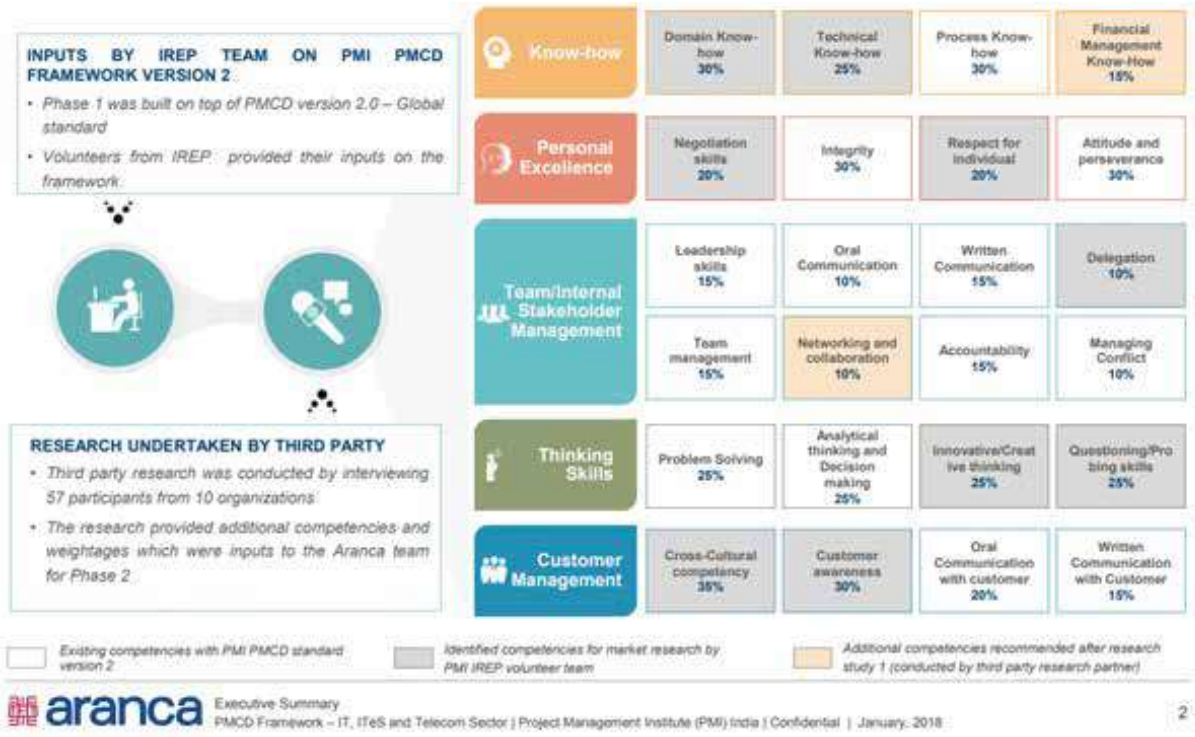
Determine

interventions/key enablers that project leaders can utilize to address the gaps/ challenges in acquiring this competency.

Provide

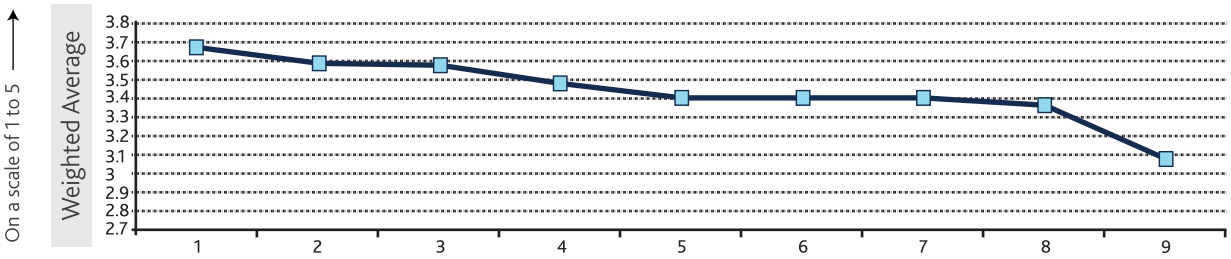
any additional insights and approaches that support realizing the benefits from such objectives.

Context of the Study



As shown in the above figure, the PMI Project Management Competency Development Framework has revealed that domain knowhow is one of the major skills required for the success of a project

Survey results of 186 practitioners: lack of domain knowledge ranked the highest



As shown in the above figure, the PMI Project Management Competency Development Framework has revealed that domain knowhow is one of the major skills required for the success of a project

1. Lack of required competency to understand stakeholders' business needs that are rapidly evolving due to the changing technology landscape, which often results in incomplete /erroneous business requirements.
2. Lack of the ability to identify and adopt suitable delivery methods, besides traditional project management skills that are being challenged due to changing technology and market demand, resulting in short/medium sized projects with a short release cycle (more SI).
3. Lack of people motivation for a good understanding of the disciplines (requiring teams to co-locate at the client site for integration) and lack of a fast learning attitude to reskill to new technologies, new delivery methods and new responsibilities.
4. Lack of timely and top down percolation of effective change management within the organization based on the requirements and the lack of culture to quickly accept and adopt the change is impacting the output/productivity of the teams.
5. Lack of leadership commitment in creating an organization culture that provides executive support, which is impacting the project lifecycle.
6. Project management and software development activities at times are developed into separate, but related activities, thus resulting in project team mindsets that fail to see integrated development and delivery processes/practices.
7. Project teams are working in an organization (having enabling functions, verticals, horizontals etc.) set up, which is not conducive for collaborative and supportive functioning to accommodate dynamic changes.
8. The organizational inability in anticipating the customer/market requirements/demands in advance.
9. Delivery of small modules/components/apps by people distributed across multiple locations and embedment of open source components into an integrated product/service.

Source: Executing Projects in a Complex and Dynamic Environment with Changing Business Needs

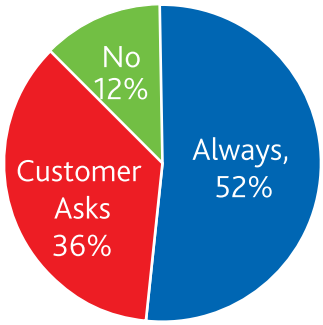
Research and Analysis Topics
(for focus group discussions and surveys of practitioners)

The focus group discussions and subsequent surveys took into consideration the factors affecting business and functional domain knowledge in project managers. Topics covered were:

- What is functional and business domain knowledge? Where is the domain knowledge required/crucial to the progress of a project?
- In which area/project management phase are domain-specific SMEs required?
- What level or depth of domain knowledge is necessary for project managers to successfully execute their projects?
- Can there be a defined manner in which a project manager gathers domain/functional knowledge? What challenges do project managers face in acquiring domain knowledge?
- Assess whether the industry is incentivizing the creation of more generalists or specialists, and what are some counterproductive moves?
- How useful are standard industry-level versus organization specific domain certification programs in the delivery of projects?

The Presence of Domain Experts in Today's Industry

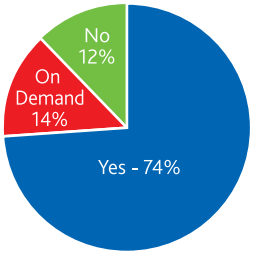
The survey on the presence of domain experts in projects shows a low concentration of dual project managers.



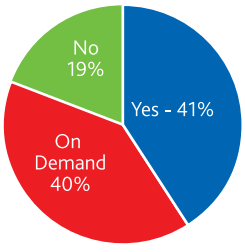
Organization Support and Ecosystem

Organizations want employees to be:

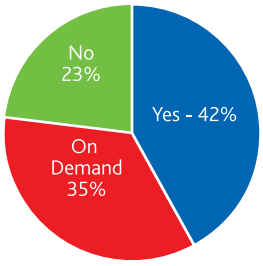
- **Engaged** with their missions, values and visions
- **Aligned** with their strategic plans
- **Skilled** to drive performance
- **Trained** on domain specifics (as the survey indicates)



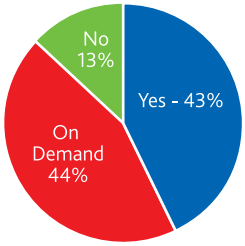
Domain-specific internal training



Training / IP for PMs Shifting Domain



Organizations Sponsoring External Domain Certification

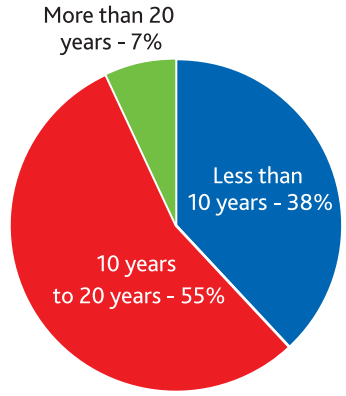


Easy Access to Domain IP

Refer to the above charts for the survey findings. The surveys indicate that the majority of organizations provide a conducive environment and support the cultivation of domain knowledge in their employees. They provide the necessary budgets and infrastructure for domain trainings and internal/external certification.

Different Levels of Domain Knowledge Required Based on Project Complexity

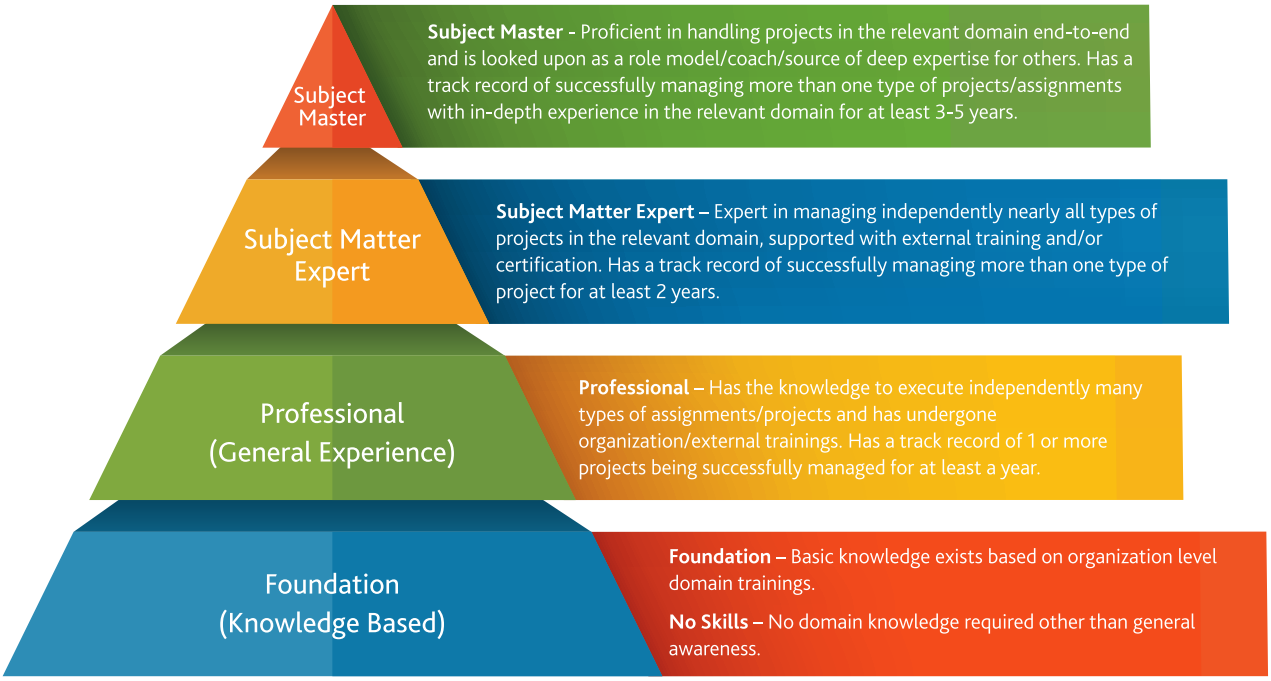
Type of Project	Project Manager			Project Team		
	Knowledge of client's business	Business / industry skills	Functional / technical skills	Knowledge of client's business	Business / industry skills	Functional / technical skills



Survey - Participation experience

The above figure shows the results of the second survey. The survey was conducted to understand the levels of knowledge of the client's business, business/industry skills, and functional/technical skills that the project manager and project team members should possess to succeed in different types of projects.

Levels of Domain Knowledge



Types of Projects Covered in the Survey:

Application Support/Managed Services

Application/production support, defect fixes, minor enhancements, service requests related to applications under support

Migration

Projects involving the process of moving an application program from one environment to another. Examples include migration from an on-premises enterprise server to a cloud provider's environment or from one cloud environment to another.

Package Implementation

Implementation and roll-out of a set of packages across sites/countries.

Product Engineering

Product engineering takes care of the entire product lifecycle from the innovation phase, starting from the idea being conceived to designing, developing, testing, deployment, and user acceptance testing.

Infrastructure Related

Manage and maintain infrastructure support, technical implementation, migration.

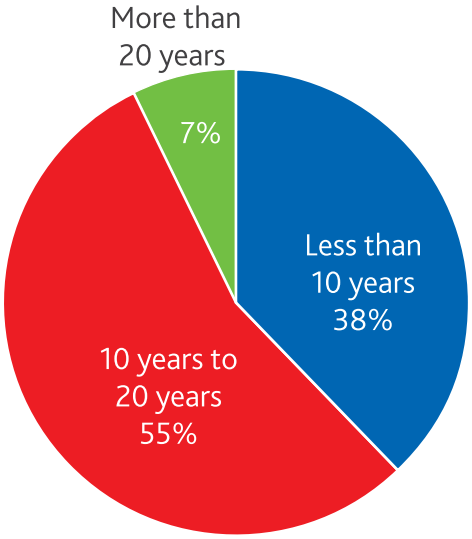
Testing

Pure testing projects leveraging tools and existing methodologies.

Research

Expansion or enhancement of an existing work or enhancement based on newage technologies, market requirements, business models etc.

Survey Participants' Work Experience



Survey – Participation experience

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PMI Organization Centre Private Limited, India

E-mail: customercare.india@pmi.org | Phone: +91 124 4636 250

Website: www.pmi.org.in