PMI's
PULSE of the PROFESSION® In-Depth Report

The Project Manager of the Future

Developing Digital-Age Project Management Skills to Thrive in Disruptive Times

Project Management Institute

ABOUT THIS REPORT

PMI's *Pulse of the Profession*® in-depth commissioned research was conducted online by Forrester Consulting for PMI among 469 human resources (HR) professionals who hire, direct, oversee, and/or train staff that work on projects or programs, as well as 523 project leaders. The HR professionals are managers or higher at mid-to-large size organizations (50+ employees). Respondents were in the United States, Canada, Brazil, the United Kingdom, France, Germany, China, India, and Australia. Forrester Consulting also conducted in-depth interviews on behalf of PMI with six HR professionals and 10 project leaders.

469 HUMAN RESOURCE PROFESSIONALS

523 PROJECT LEADERS

"Project leaders are becoming even more essential as organizations recognize that strategy is implemented through projects and programs, and as disruptive technology frees them from mundane routines, providing more opportunity to innovate."

MARK A. LANGLEY,
PMI President and CEO

The Power of Project Management

From achieving globalization in a fractured world to managing the impact of disruptive technologies, businesses must be agile and quick to adapt in our rapidly evolving and highly competitive environment. This creates both challenges and opportunities for the project management profession and for those who manage projects.

PMI has spent a great deal of time studying the future and new ways of working in this profession. As we outlined in our 2018 *Pulse of the Profession®* Report, *Success in Disruptive Times,* the future of project management will require organizations and individuals alike to embrace a full spectrum of competencies and approaches, along with a wide range of titles and methodologies. By maturing their ability to activate the value delivery landscape, organizations will minimize their risks, control costs, improve speed to market, and increase value.

Not only is global business being impacted by technological disruption, but so are the roles of those who manage the projects. We see their roles within the value delivery landscape expanding to be those of a strategic advisor, innovator, communicator, big thinker, and versatile manager. Project leaders are becoming even more essential as organizations recognize that strategy is implemented through projects and programs, and as disruptive technology frees them from mundane routines, providing more opportunity to innovate. Their titles are evolving. We see project managers; team leads; scrum masters and product owners; delivery, implementation, and change managers; and transformation leads, among others. Mainly we see the lead project role evolving from project manager to project lead, and even becoming project executive in some organizations, which is reflective of the expanded and essential role these professionals play in managing through disruption.

In this new professional reality, project leaders (whichever title they use!) continue to need a thorough combination of technical and project management skills, leadership skills, and strategic and business management skills, which are part of the PMI Talent Triangle®. In addition to this important triad of skills, we know that organizations need project leaders with an ability to learn and keep pace with technology. As shown in the graphic, we have added a new digital overlay to the PMI Talent Triangle® to emphasize how digital transformation is impacting every aspect of our work. This study investigates the digital skills that are most important for the evolving role of those who manage projects.

When we think of digital skills, we often think of computer-oriented tasks such as coding or using software skills effectively. But building a truly digital skill set that enables success in today's digital environment requires the combination of skills you'll see outlined in this report. Specifically, the top six digital-age skills are outlined on page 5. They are: (1) data science (data management, analytics, big data), (2) an innovative mindset, (3) security and privacy knowledge, (4) legal and regulatory compliance knowledge, (5) the ability to make data-driven decisions, and (6) collaborative leadership. Isn't it interesting that some of the "softer" skills, such as innovation and collaboration, also show up as being important in the digital age? We'll examine that further in a sidebar conversation with our partners from the Society for Human Resource Management (SHRM).

As we watch this profession grow—both in terms of demand for skilled professionals and the expansion of skill sets—we designed this research to better understand how organizations are preparing their project talent to manage the impact of disruptive technologies and the role project leaders are playing. In this closer look at how disruption is fueling the evolution of the profession, we offer some next steps that organizations can take now and in the future to maintain competitive advantage. You may think that the steps are fairly simple, but keep this in mind: The simplest solution is often the best (and it's usually the one that's overlooked).

Let's do great things together!

Mark A. Langley

Mark A. Langley
President and CEO

FOREWORD

THE POWER OF PEOPLE

TRENT BURNER,
VP, Research,
Society for Human Resource Management

LIZ SUPINSKI,
Director Data Science, Research,
Society for Human Resource Management

In the coming years, organizations will face an unprecedented wave of change propelled by a globalized economy, a massive generational workforce shift, an escalating war for talent, the rise of contingent labor and cognitive roles, and, of course, the invasion of disruptive technologies. Companies that want to push beyond the status quo must put renewed focus—and importance—on the role human capital plays in the essential element of business. They must move beyond the 20th-century model of the worker as an interchangeable part of a complex machine. Instead, organizations that seek to lead must carefully manage and optimize their workforce. They must build and maintain effective systems for sourcing and hiring workers, for establishing and evolving career paths, and for fostering continuous learning opportunities and cultures of growth.

At the Society for Human Resource Management (SHRM) we are dedicated to helping organizations learn to maximize that human capital, and to supporting human resources (HR) professionals in their increasingly crucial and strategic roles. No HR department is an island, however, and HR must have strong, dynamic partnerships throughout their organizations in order to help those organizations succeed. Through effective HR management and collaboration across the organization, firms can ensure they are placing the right people into the right roles, and provide them with the training, development, and organizational and management structures that will enable them to do the right things to enable the business strategy.

With this report, PMI makes clear the critical nature of partnerships between HR and project management for organizations that want to be successful in capitalizing on technological disruption and managing change to achieve business success.

In our own practice in SHRM's Research division, we believe data and insights can present a unique opportunity for HR to drive organizational strategy and direction. Just this year, we have started a new journey. We have moved away from conducting research on HR issues and are now focusing on economic and data science research on workplace trends and building a team with researchers, including data scientists, programmers, data journalists, and economists. With this approach, we believe SHRM will be more relevant than ever before to the entire workplace, not just HR.

Like successful project teams in all sorts of organizations, SHRM Research believes that selecting and engaging talented people and fostering continuous development of their technological and soft skills is crucial for us to meet our goals and those of our membership.

Likewise, PMI's Talent Triangle® with the new digital overlay acknowledges that technical skills are not enough on their own, but must be paired with leadership and strategic and business management in order to support longer-term strategic objectives. In SHRM's report *The New Talent Landscape: Recruiting Difficulty and Skills Shortages,* HR professionals in organizations that were hiring full-time employees rated the need for new skills for these positions. The most commonly cited new skills for organizations were soft skills (problem-solving, interpersonal, communication, teamwork, leadership) at 45%, followed closely by computer/web/IT and management/project management, both at 39%.

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Best practices in sourcing and developing talent are not enough on their own. Once solid foundations are in place, organizations are well positioned to go big and disrupt. Embracing change and cultivating a culture of innovation and creativity are other ways we build agility into our organizations' DNA. SHRM CEO, Johnny C. Taylor Jr., has said that if our dream doesn't scare us a little, we need to "dream bigger." He insists that it is incumbent upon HR to imagine the workplace of tomorrow and to make it happen. We at SHRM have taken that challenge to heart and are delighted to see PMI also dreaming bigger by helping make the workplace of tomorrow be more productive and agile, and one that makes the best use of business' most critical resources: the human ones.

EXECUTIVE SUMMARY

Organizations that succeed in this age of disruption are those that adapt rapidly to new opportunities and challenges. Forward-thinking organizations are building better products and creating stronger customer relationships with a speed that hasn't been seen before.

They rely on a workforce that has the skills and experience to manage the impact of disruptive technologies, and pair those experts with the data and digital tools—artificial intelligence and machine learning, among others—that enable agility and speed. They empower employees to experiment with different ways of organizing work and offer robust training to broaden their capabilities. They create roles, assign titles, and empower their teams to select the project management approach most appropriate to ensure success.

For this research, we surveyed 469 human resources (HR) professionals to gain a deeper understanding of important existing skills as well as the new skills needed by project leaders to face current business challenges. These talent managers direct and oversee staff who work on or manage programs and projects. They are involved in hiring, recruiting, training, and/or developing project leaders. In addition, we surveyed 523 project leaders to gain their perspectives on the same topic.

For the HR professional audience, our research reveals very simple and clear drivers of effective management of the impact of disruptive technologies. These drivers provide a data-driven understanding of HR leading practices that can deliver organizational success in the age of digital disruption. A regression model was used to determine the strongest relationships between talent acquisition and talent development leading practices and project success.

80% OF INNOVATOR ORGANIZATIONS ARE HIGHLY EFFECTIVE AT RECRUITING AND HIRING PROJECT LEADERS WITH THE SKILL SETS THAT ARE NECESSARY TO DRIVE THE ORGANIZATION FORWARD INTO A DIGITAL ENVIRONMENT.

TOP DRIVERS TO EFFECTIVELY MANAGE DISRUPTIVE TECHNOLOGIES

SKILLS, TRAINING, AND DEVELOPMENT:

Innovator organizations see the most important digital-era skills for prospective project leaders as data science (data management, analytics, big data), an innovative mindset, security and privacy knowledge, legal and regulatory compliance knowledge, the ability to make data-driven decisions, and collaborative leadership. Innovators also report investing in formal processes to develop project manager competencies in these skills.

TOOLS AND APPROACHES:

Project leaders are using multiple approaches, including collaborative platforms and work management tools, along with emerging, hybrid, and traditional methods to help them deliver. Our research shows that project leaders consider themselves ready, willing, and able to use these tools and approaches to manage the impact of disruptive technologies.

CULTURE:

Innovators are creating a culture that views disruption as an opportunity to enable dexterity. They value the technological shift toward a digital environment as they encourage their project leaders to take advantage of flexible practices and new tools, and pave the way for a continued evolution to an environment where people and machines work together toward more successful outcomes.

In this report, we take a closer look at how HR and project leaders at forward-thinking organizations—those we call innovators—are focusing on these top drivers to successfully manage the impact of disruptive technologies. Compared to laggards, innovators have a mature digital transformation strategy, are far more risk tolerant, and make the adoption of new disruptive technologies a priority for their organizations.

The vast majority of innovators (80%) are highly effective at recruiting and hiring project leaders with the skill sets that are necessary to drive the organization forward into a digital environment. And, nearly three-quarters of innovators consider their organizations highly effective at training project leaders. Those skill sets are featured later in this report, along with examples of how innovator organizations have leveraged disruption to their advantage.

The organizations that will thrive in the face of disruption are those that invest in their talent to enable increased productivity, build better products and services, create greater efficiency and automation, increase innovation, reduce paperwork, foster better decision making, and automate mundane tasks. They embrace the value delivery landscape—or the full spectrum of competencies needed to deliver their projects and programs in a digital environment. Read on to understand what the project leader of the future looks like and how successful organizations are working to stay one step ahead of disruption.

> **Seven in ten project leaders** are either currently using or considering the use of lean agile practices to manage the impact of disruptive technologies.

PERFORMANCE LEVELS

The most successful organizations embrace a mindset that sets them apart. They are developing new ways of working and relying on disruptive technologies to gain a competitive advantage. To gain a better understanding of what "good" looks like, we focused on two performance levels among HR respondents:

INNOVATORS: The top 34% of the organizations in the survey are those that rate themselves as effective in managing the impact of disruptive technology. Compared to laggards, they have a mature digital transformation strategy, are far more risk tolerant, and make the adoption of new disruptive technologies a priority for their organizations.

LAGGARDS: The bottom 8% of the organizations in the survey are those that rate themselves as not being effective in managing the impacts of disruption. Compared to innovators, they are far less risk tolerant and are less likely to make the adoption of disruptive technologies a priority for their organizations.

THE TOP SIX DIGITAL-AGE SKILLS FOR PROJECT DELIVERY

When asked which skills are most important in building a truly digital capability for project leaders, HR professionals in innovator organizations said the following combination of skills were most important.

1

Data Science Skills

Data Management, Analytics and Big Data

2

Innovative Mindset

3

Security and Privacy Knowledge

4

Legal and Regulatory Compliance Knowledge

5

Ability to Make Data-Driven Decisions

6

Collaborative Leadership Skills

It is interesting to note the skills that did *not* rank at the top of the list for HR managers: customer focus and change management. This could represent a potential gap—and an important learning opportunity—as both of these skills are essential to not only driving digital transformation, but also thriving in today's evolving business world.

Consider customer focus. According to PwC's *Future of Customer Experience Survey* 2017/2018[1], 73% of customers worldwide say positive customer experience is a key influence in their purchasing decisions. And 32% say they would stop doing business with an organization after just one bad experience. Today's customers demand personalization, speed, convenience, friendliness, and knowledge. Digital transformation can enable organizations to meet those demands by putting in place technologies that will help them gain a better understanding of customer behaviors and motivations, as well as technologies that will provide the means to develop new products, services, and interactions. For any digital transformation, it's the customer who must lead the strategy.

These new capabilities, however, will fail to meet expectations without established change management practices. According to a survey from Bain & Company[2], only 5% of companies executing digital transformation programs reported them meeting or exceeding their expectations. And, as we outlined in our last *Pulse of the Profession* report, 28% of project professionals say that poor change management was a primary cause of project failure during the past 12 months.

[1] *Future of Customer Experience Survey 2017/2018*, PwC, 2017/2018.
[2] *Orchestrating a Successful Digital Transformation*, Bain & Company, 2017.

WORKFORCE READINESS

Disruption is the new normal, and success relies on a workforce that can manage the impact of new technologies. Project leaders are essential in tomorrow's changing landscape. According to a 2017 report by the Institute for the Future and Dell Technologies[3], 85% of the jobs that will be available by 2030 haven't even been invented yet!

More near term, 55% of organizations say the gap between the digital talent they need and the talent they can find today has widened in the last few years, reports *The Digital Talent Gap* study by LinkedIn and Capgemini[4]. Similarly, 54% of organizations say this gap is hindering their digital transformation programs.

In this environment, digital-capable project professionals are essential. As we outlined in our last *Pulse of the Profession®* In-Depth report, project leaders are well positioned to become advocates for the disruptive technologies that will help them work more effectively. They are becoming versatile managers, innovators, and motivators, helping their teams embrace technology and disruption.

The 2018 *Workplace Learning Report,* also by LinkedIn, details how employers are feeling the crush of skill gaps across all industries, and how they're responding by creating learning opportunities to guide staff and their organizations to thrive in tomorrow's labor market. Training for interpersonal skills ranked as the top priority in the study. Results from our 2018 *Pulse of the Profession®* research are similar: Four in five respondents report that soft skills, such as communication, leadership, and negotiation, are more important today than they were just five years ago. Our current research reveals that data science skills (data management, analytics, big data), an innovative mindset, security and privacy knowledge, legal and regulatory compliance knowledge, the ability to make data-driven decisions, and collaborative leadership skills are also essential for future success.

ACCORDING TO A 2017 REPORT BY THE INSTITUTE FOR THE FUTURE AND DELL TECHNOLOGIES, 85% OF THE JOBS THAT WILL BE AVAILABLE BY 2030 HAVEN'T EVEN BEEN INVENTED YET!

A majority (80%) of the innovator organizations are highly effective at recruiting and hiring project managers with the skill sets necessary to drive their organizations forward. Almost three quarters of these organizations recognize that it is important for project managers to understand the impact of disruptive technologies on external customer projects and actively recruit project professionals with specialized skill sets that are necessary to manage the impact of disruptive technologies.

But, while recruiting the right skills is necessary for organizations to succeed at digital transformation, it doesn't ensure success. Organizations must also focus on internal improvements—including making training and development a priority, embracing new tools, and nurturing culture change—to effectively manage the change brought forth by disruptive technologies.

"New disruptive technologies have had a tremendous impact on our company in the past few years. Even project managers who did not have a highly technical background were able to obtain a certain level of technical skills. The main effect has been on our mindset: We have developed an entrepreneurial mindset internally. As people become more in touch with new technologies, they gain confidence that they can find ways to get things done."

Shreyans Parekh
Manager, Technology Portfolio Strategy and Product Marketing
New Relic, United States

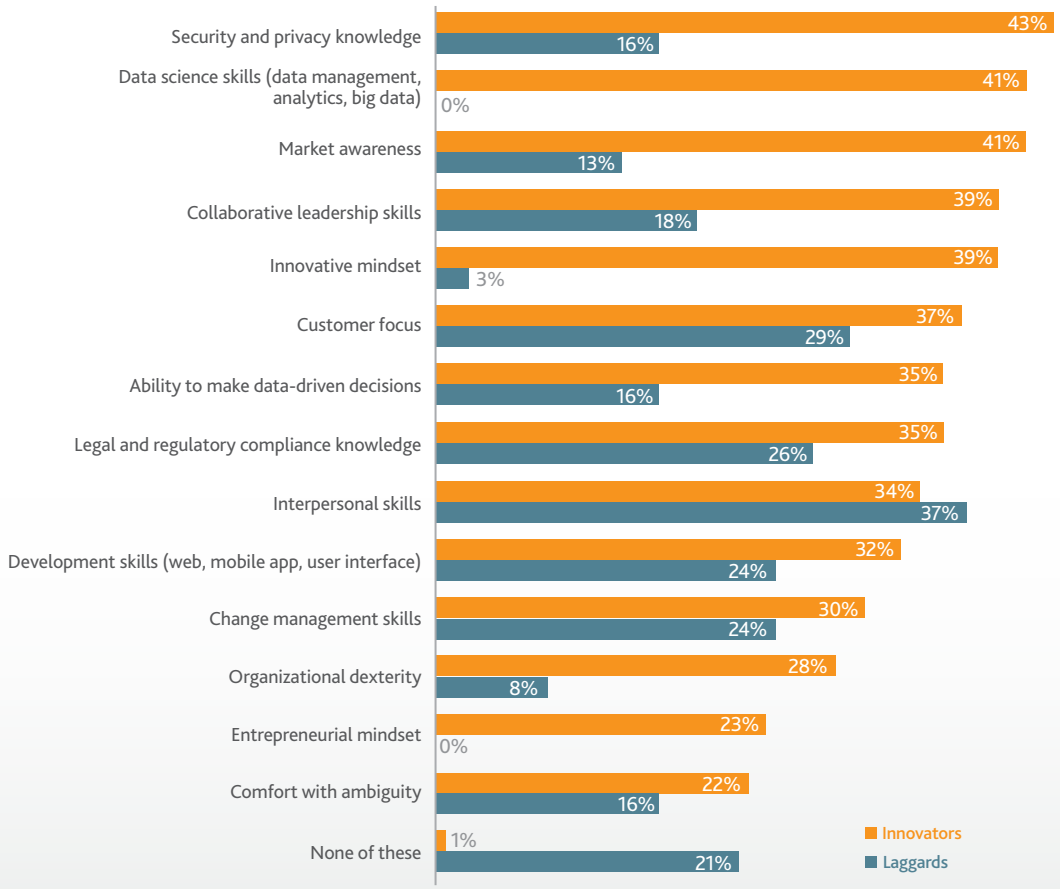
[3] *The Next Era of Human Machine Partnerships: Emerging Technologies' Impact on Society and Work 2030,* Institute for the Future and Dell Technologies, 2017.
[4] *The Digital Talent Gap: Are Companies Doing Enough?* LinkedIn and Capgemini, 2017

MAKE TRAINING AND DEVELOPMENT A PRIORITY.

As project leaders take on a more expansive role, training and skill development are even more crucial. Innovators are responding with formal processes for developing those competencies through internal and external training in security and privacy knowledge, data science, collaborative leadership, and embracing an innovative mindset (see Figure 1).

> "Generally, talent development has gotten easier with digital. We can reach many more people who are not able to go for full-day training. Now we have more frequent, smaller bursts of training with webinars. This actually helps us reach our objectives more quickly. We also use a chat box feature that allows clients to talk to each other and recreate that face-to-face atmosphere."
>
> **Theresa W.,**
> Consultant with Social Science Research Organization,
> *United States*

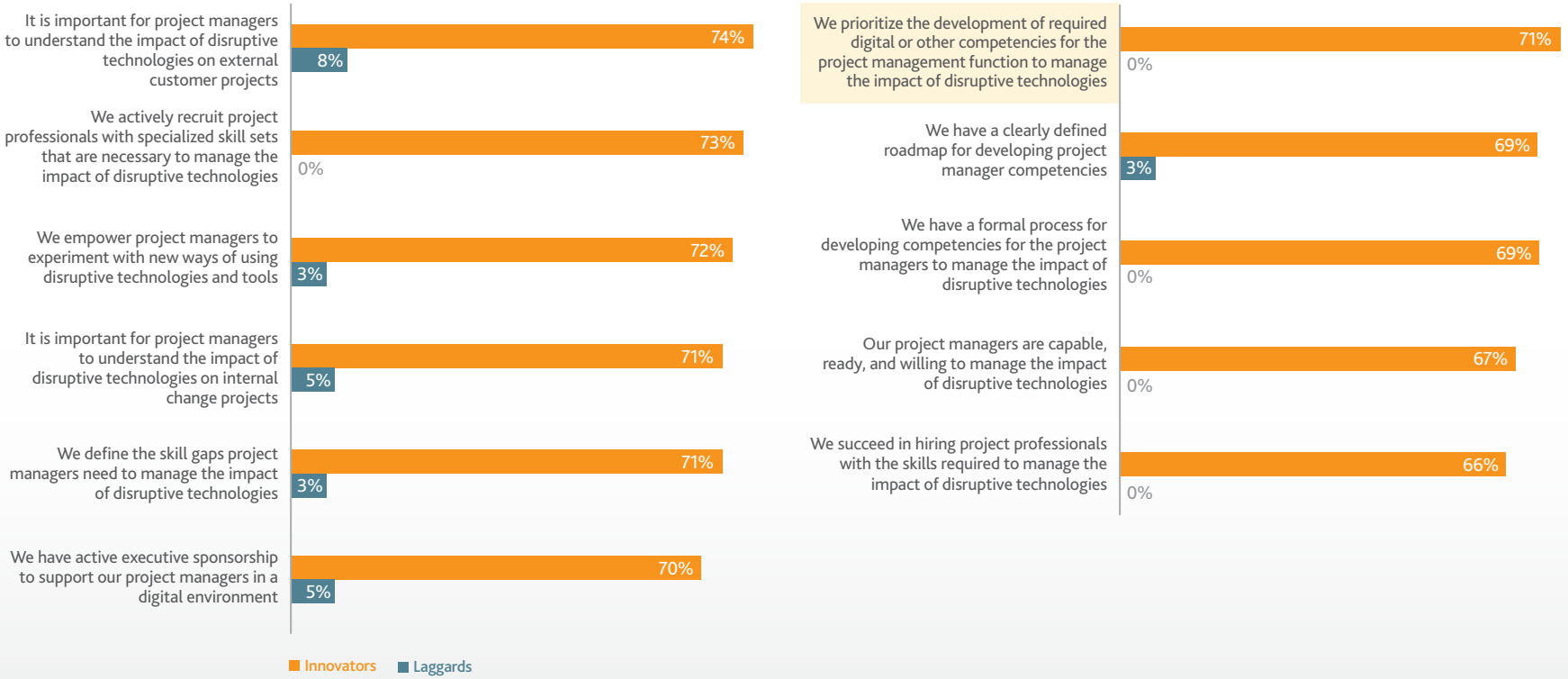
Figure 1: Skills Fostered Through Training and Development



Adopt a formal, documented career path for project leaders

Innovators invest in formal, documented career paths for project leaders—especially in the face of disruption. To manage the impact of disruptive technologies, almost three-quarters of innovator organizations prioritize the development of required digital or other competencies for the project leader function (see Figure 2).

Figure 2: Talent Acquisition and Development as it Relates to Managing Projects



Implement customized training and development on an ongoing basis

Innovators match skills development for project leaders in a defined career path. The vast majority (83%) provide access to internal training to develop the skills needed to manage the impact of disruptive technologies (see Figure 3). They define the duties, competencies, skills, and behaviors necessary to be successful. Further, they foster the development of the right skills through onsite training and online, instructor-led courses specifically for working in a digital environment (see Figure 4).

Figure 3: Implementing Training and Development for Project Leaders

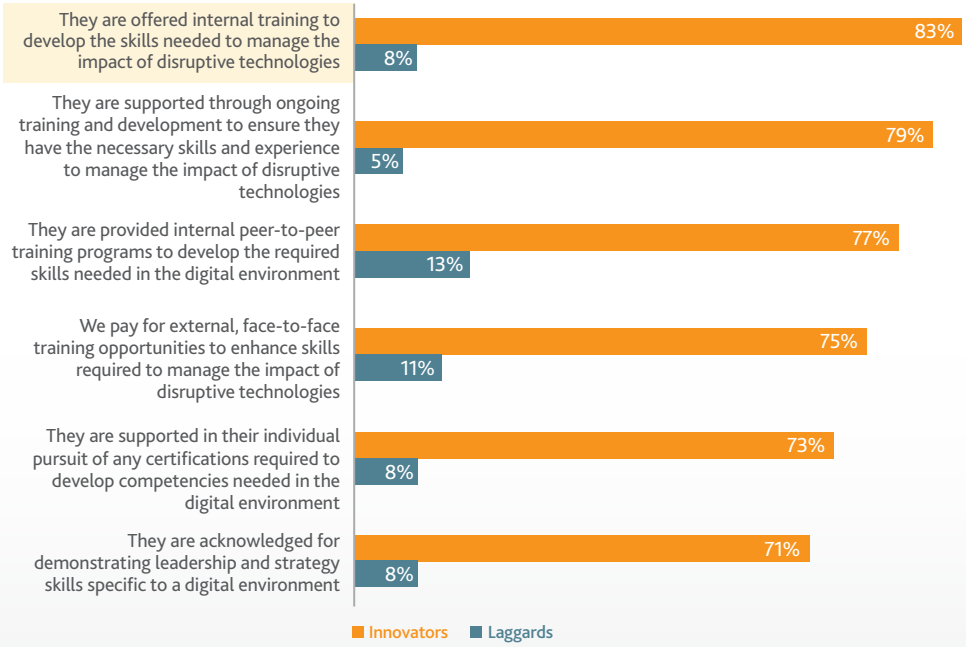


Figure 4: Retraining to Work in a Digital Environment

EMBRACE THE NEXT-LEVEL TOOLS AND APPROACHES THAT WORK

Digital transformation relies on an organization's ability to integrate rapidly evolving technology and tools. That mindset needs to apply internally, not just externally.

"What we're delivering to the customer has to evolve and change, and that requires a different focus for project managers," John Daly, Director at Cisco Systems, in Jacksonville, Florida, USA, told the Podcast *Projectified with PMI*. "And then, on top of that, when you look at digitization, it impacts the technology and solutions that we as project managers will use, right? So more immersive, collaborative solutions."

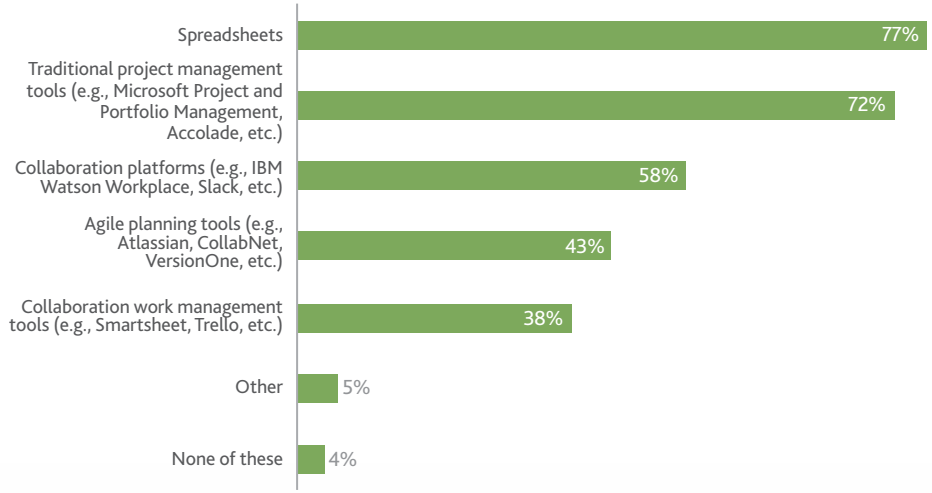
"The technologies moving forward are disruptive technologies. They're faster moving, cutting edge … and we need to be in a position not only to understand them, but we need to be able to get into that space. So in terms of our corporate culture we have geared our vision for 2020 toward being the best in the digital arena … and providing those technologies that will get us there and keep us there."

Melanie Merla
eCommerce Lead
Signify, United States

The good news, according to our research, is that project professionals are ready, willing, and able to manage the impact of disruptive technologies.

Taking a closer look at the project leaders in our study, we see they are using a combination of collaborative work management tools as well as traditional tools and spreadsheets. While decidedly not digital, spreadsheets still rank as the top tool for delivering disruptive technology initiatives. We see an almost even split between the use of spreadsheets (77%) and traditional project management tools (72%, as outlined in Figure 5). These tools enhance the interaction of people and teams—not replace them.

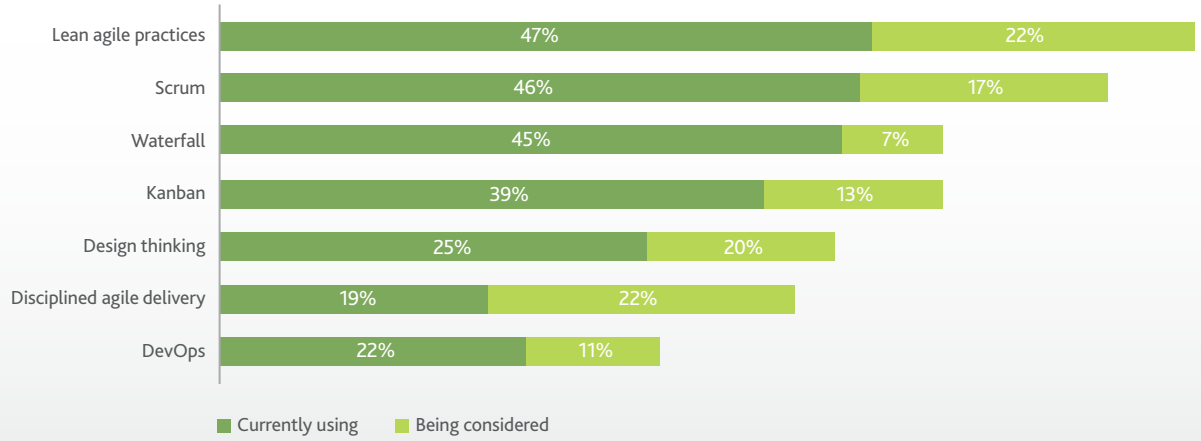
Figure 5: Tools Project Leaders Use to Deliver Disruptive Technology Initiatives



As seen in our previous *Pulse of the Profession*® in-depth report, the future of value delivery is a spectrum of approaches—predictive, iterative, incremental, agile, hybrid, and whatever will come next to change how we work. Respondents in that survey reported in the previous 12 months, an average of nearly one-half of their organization's projects used predictive approaches, while nearly one in four used either hybrid or agile.

Innovator organizations are embracing the entire value delivery landscape to deliver their projects and programs. Project leaders in these organizations see disciplined agile delivery and design thinking as the growing approaches or processes that will be needed (Figure 6). We expect the use of these new practices to grow to the usage levels of the leading current practices of lean agile, Scrum, waterfall, and Kanban. These emerging approaches might also include a hybrid or combination of approaches. We will continue to research these future approaches—or next practices—in upcoming studies.

Figure 6: Approaches Currently Used or Being Considered by Project Leaders to Manage Disruptive Technologies



NURTURE THE RIGHT CULTURE

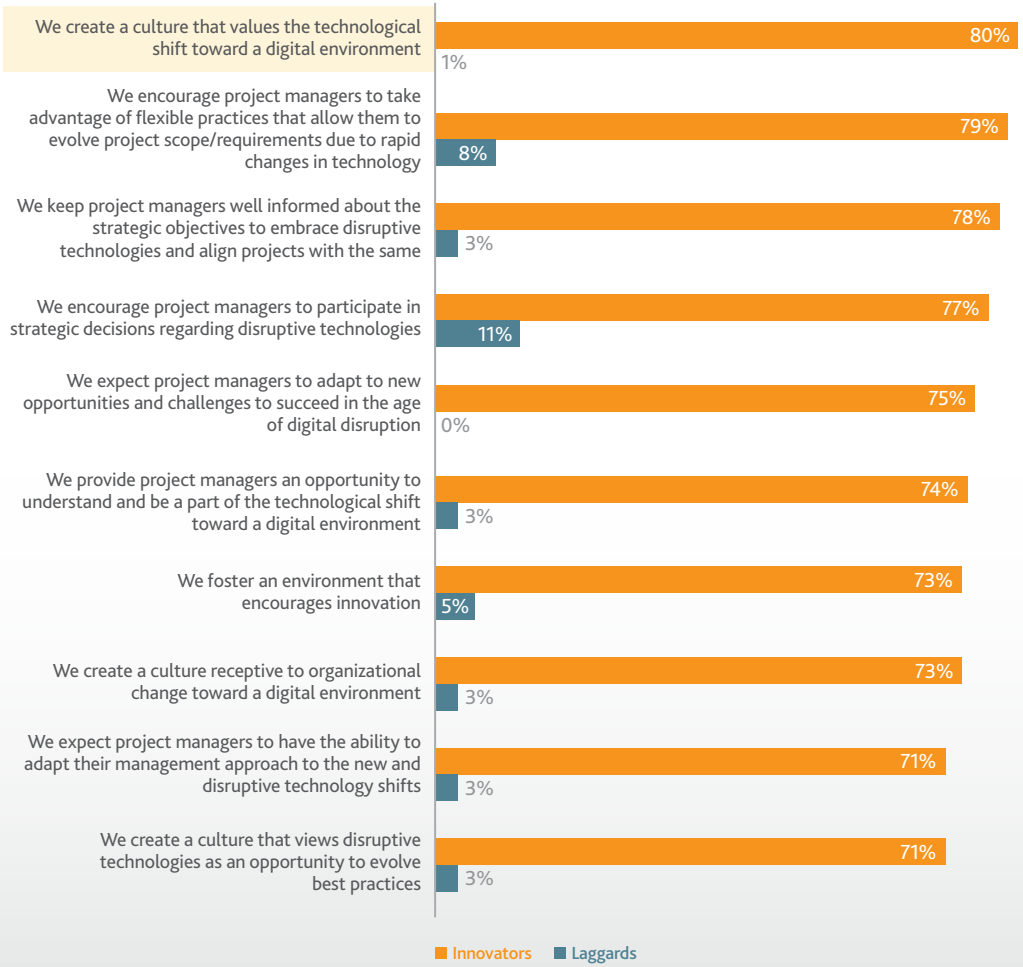
Delivered by a network of stakeholders, often with conflicting interests, projects require powerful collaboration between organizations and professionals from different groups. This involves sharing resources and aligning activities, which introduce a high degree of risk and the need for trust among participants. This can be difficult because stakeholders have their own idiosyncratic work practices, methodologies, and beliefs stemming from the organizational culture to which they belong.

"These aren't things that you can learn from a textbook or read…these are habits that you have to instill and very much the right mindset that has to be brought to the table," Henk van Huyssteen, a senior program manager for Deloitte Consulting in Cape Town, South Africa, told *Projectified with PMI*.

Innovators create and nurture a culture that views disruptive technologies as an opportunity to evolve best practices. The vast majority (80%) value the technological shift toward a digital environment (see Figure 7). They encourage their project leaders to take advantage of flexible practices that allow them to move beyond the routine tasks such as scheduling, to higher-level work such as strategic thinking and planning.

> "These aren't things that you can learn from a textbook or read…these are habits that you have to instill and very much the right mindset that has to be brought to the table."
>
> **Henk van Huyssteen,** Senior Program Manager
> *Deloitte Consulting, South Africa*

Figure 7: Investing in Culture



CONCLUSION

Are You Ready?

The most forward-thinking organizations rely on the power of project leaders to capitalize on all opportunities generated by technological disruption. One big competitive edge: Project leaders are ready, willing, and able to help their organizations not just survive, but truly thrive, in the face of massive change.

Yet, innovator organizations realize that project leaders with the right digital-era skill sets do not occur by happenstance. Innovators know they must invest in three key areas:

SKILLS, TRAINING, AND DEVELOPMENT

Innovator organizations help their project leaders build the digital-age skills they need for project delivery: Data science, an innovative mindset, security and privacy knowledge, legal and regulatory compliance knowledge, the ability to make data-driven decisions, and collaborative leadership.

TOOLS AND APPROACHES

Innovators invest in the latest tools and technologies to enhance the interaction of their people and teams. And they're embracing the entire value delivery landscape to deliver projects and programs in ways that minimize risks, control costs, improve speed to market, and add value.

CULTURE

Innovators create a culture that views disruption not as a threat—but as an opportunity.

Continuous disruption is the new normal. And laggard organizations that are slow to adapt and advance their project leaders risk being left behind—or worse, completely shut out. Innovators aren't about to let that happen. They're adapting next practices to best practices to gain a competitive edge.

Are you ready to be an innovator?

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Brussels
Buenos Aires
Dubai
Dundalk
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Mumbai
New Delhi
Philadelphia
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