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# THE IMPACT OF TECHNOLOGY-LED INNOVATION ON THE CHANGING ROLE OF THE PROJECT MANAGER

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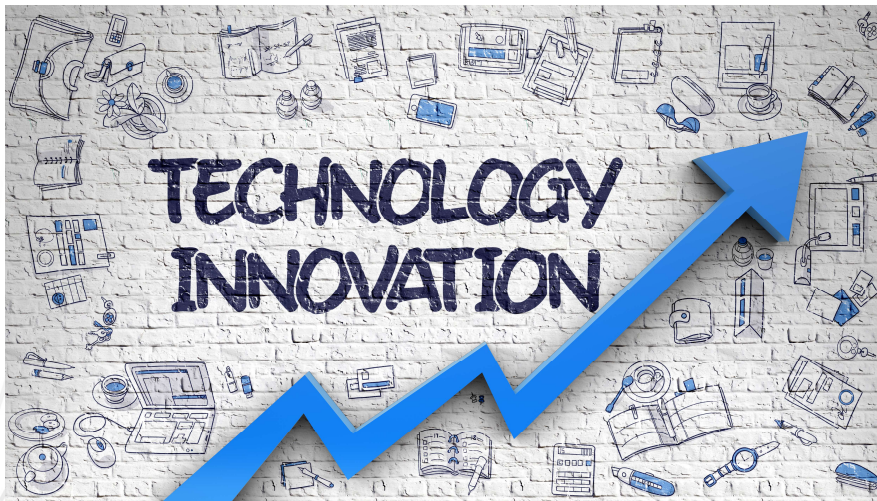


"It is change, continuing change, inevitable change, that is the dominant factor in society today. No sensible decision can be made any longer without taking into account not only the world as it is, but the world as it will be."

~ Isaac Asimov



## Technology-led innovation



- The process of implementing a new technical idea<sup>1</sup> where technology is the source of innovation and generates value
- Creates technological-enabled disruptions
- Highlights change in a number of organizational areas:
  - Efficiencies
  - Performance
  - Learning capabilities



# Types of Innovation<sub>1</sub>

**Radical** refers to blowing up the existing system or process and replacing it with something entirely new and unique<sup>2</sup>

Risk: High

ROI: High



**Disruptive** refers to the displacement of an established technology that shakes up the industry<sup>3</sup>

Risk: High

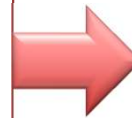
ROI: High



## Types of Innovation<sub>2</sub>

**Incremental** innovations build on previous radical innovations<sup>4</sup>

Risk: Lower      ROI: Medium



**Sustaining** refers to a reliance on incremental improvements to an already established technology

Risk: High      ROI: High

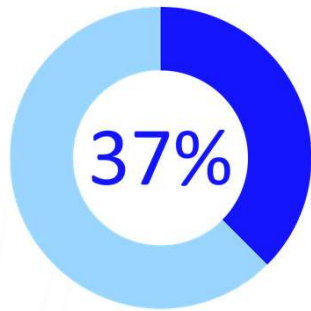




## Innovation trends

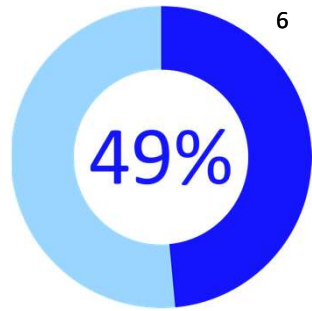
*By 2024, global investment in emerging AI technologies is projected to reach US\$3 trillion—up from US\$126 billion in 2015, according to a 2016 Transparency Market Research report. As AI ascends, it has the power to fundamentally transform project management decision making<sup>5</sup>*

## The trend is real



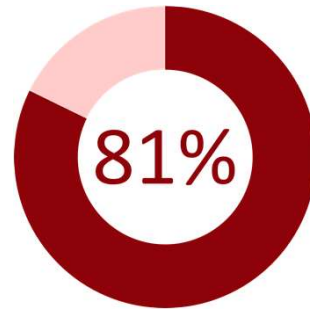
Firms implementing AI technology

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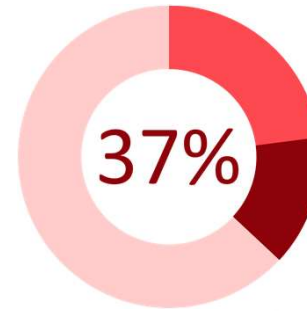


Firms changing their business models to adopt new technological solutions<sup>6</sup>

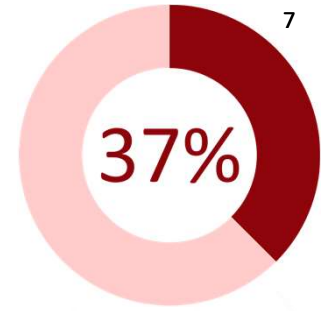
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Organization is being impacted by AI technologies



Portion of projects using AI to jump



Adopting AI technologies is a high priority<sup>7</sup>

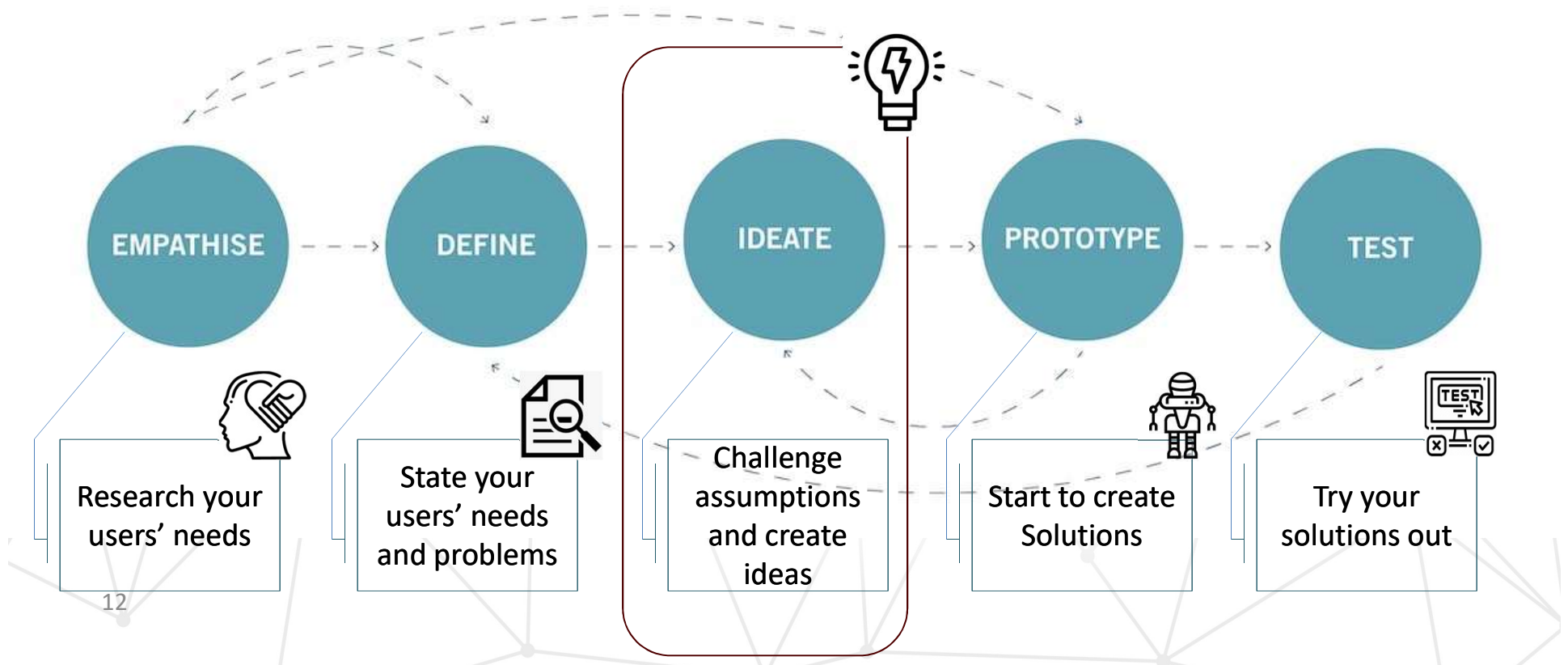
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Innovation centers on  
**PROBLEM-**  
**SOLVING** and the  
focus is on  
**EXPERIMENTATION**  
first, recognizing  
**RESULTS** and not  
activities

“Design thinking is a human-centered approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success.”

— *Tim Brown, CEO of IDEO*

# 5 PHASES OF THE DESIGN THINKING PROCESS<sup>8</sup>



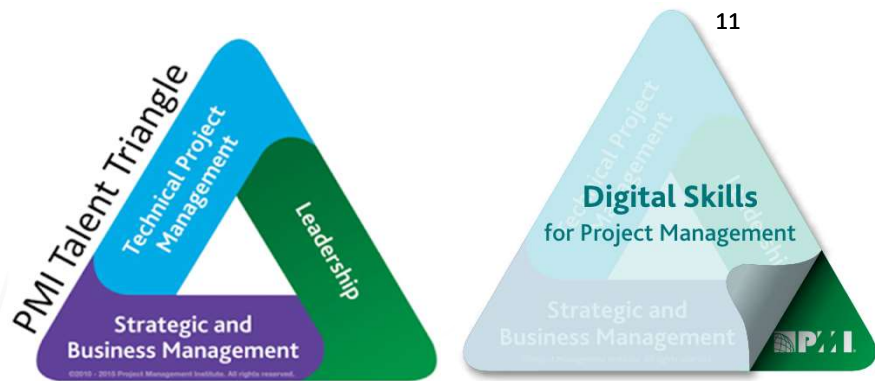


## Attributes of a technology-led innovation project

- Ambiguity
  - Scope starts broadly
- Undefined outcomes
  - Creates uncertainty
- Failure can be a real outcome
  - Learn to fail fast, fail smart<sup>9</sup>
- Experimental and even exploratory
  - Seldom follow strict linear guidelines
- Shorter timelines
  - Planning and schedule is an issue
- Budget
  - Implementing change without a big envelope
- Sponsors
  - Many, as every CXOs have “skin in the game”

“In fact, innovation has become a core competency, essential to success in a rapidly shifting strategic environment. So why is it that so few project managers consider innovation to be a strength?”<sup>10</sup>

## Culture shifts driven by innovation



- Project management has become the delivery system for innovation activities
- Demands project managers to lead transformation that they can understand and have been charged to lead

# THE TOP SIX DIGITAL-AGE SKILLS<sup>12</sup> 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.

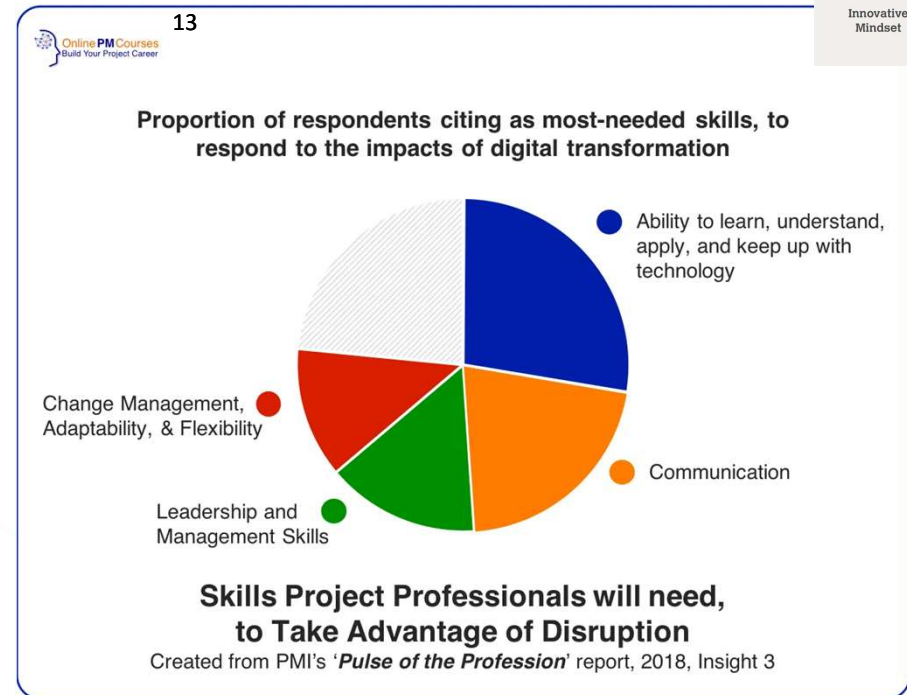




# Professional skill shifts



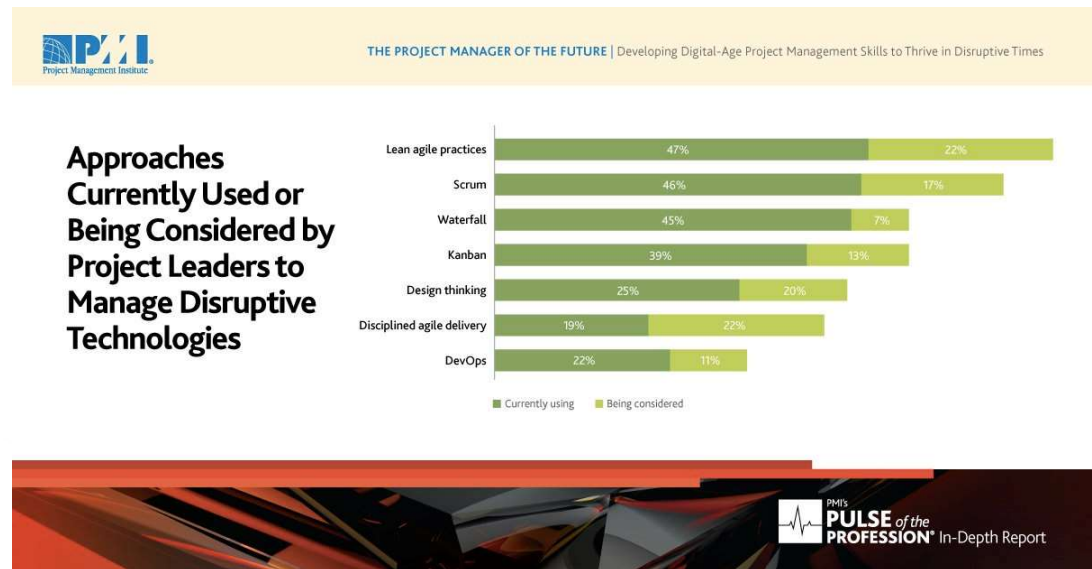
- It isn't about the "scary" concepts like AI, Machine Learning (ML), neural networks or block chain.
  - Be fluent in the technology and tools that your organization have already invested
  - Be ready to use a mix of methodologies and technologies



# Culture driven by innovation

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- Seven in ten project leaders are either currently using or considering the use of lean agile practices to manage the impact of disruptive technologies
- Agile and adaptable talent
- Develop a PMTQ mindset



A Project Management Technology Quotient or PMTQ is a person's ability to adapt, manage and integrate technology based on the needs of the organization or the project.<sup>15</sup>

“Softer skills like problem-solving, creativity, innovation, leadership. These skills that rely on the complexity of the human mind, that can’t really be outsourced to software.”<sup>16</sup>

If project managers are not expected to be fluent in cutting-edge technology, what skills should they be focussing on?

## Softer skills of project management



- Collaboration shows up as being an important skill in the digital age
- Make collaboration the norm
- Executives want to be reassured that the time and funds invested are going to yield some type of result

“It must be considered that there is nothing more difficult to carry out  
nor more doubtful of success nor more dangerous to handle than to  
initiate a new order of things.”

~ Machiavelli



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# References<sub>1</sub>

<sup>1</sup>Marquis D.G., [1969] *"The Anatomy of Successful Innovations"*, Innovation, November. Reprinted in M.L. Tushman and W.L. Moore, Eds. *Readings in the Management of innovation*, Marshfield, MA, 1982

<sup>2</sup>Search CIO, Definition of radical innovation, <https://searchcio.techtarget.com/definition/radical-innovation>

<sup>3</sup>The Innovator's Dilemma, Clayton M. Christensen, 1997

<sup>4</sup>Defining Innovation,  
<https://repository.up.ac.za/bitstream/handle/2263/30490/02chapter2.pdf?sequence=3&isAllowed=y>

<sup>5</sup>"The Future of Work: Leading the Way with PMTQ", PMI Pulse of the Profession, March 2019

<sup>6</sup>CIO Survey Gartner: Enterprise Adoption of AI has grown over 270 percent over the past 4 years, 2019 CIO Survey, by Kyle Wiggers, January 21, 2019 <https://venturebeat.com/2019/01/21/gartner-enterprise-ai-implementation-grew-270-over-the-past-four-years/>

<sup>7</sup>Artificial Intelligence (AI) Innovators: Cracking the Code on Project Performance, PMI's Pulse of the Profession In-depth Report, June 2019

<sup>8</sup>Hasso-Plattner -Institute of Design at Stanford, 5 Stages of Design Thinking Process



## References<sub>2</sub>

<sup>9</sup>Project Management vs. Managing Innovation Projects, Chuck Frey, <https://innovationmanagement.se/imtool-articles/project-management-vs-managing-innovation-projects>

<sup>10</sup>"Time, risk, and innovation: creating space in your day to solve meaningful problems", by Gallagher, S. Paper presented at PMI® Global Congress 2015—EMEA, London, England. Newtown Square, PA: Project Management Institute, 2015

<sup>11</sup>The Project Manager of the Future: Developing digital-age project management skills to thrive in disruptive times (2018), [https://www.pmi.org/-/media/pmi/documents/public/pdf/learning/thought-leadership/pulse/digital-pm-skills.pdf?v=234f58d6-0d0b-4451-bc3f-19f7d0bb92da&sc\\_lang\\_temp=en](https://www.pmi.org/-/media/pmi/documents/public/pdf/learning/thought-leadership/pulse/digital-pm-skills.pdf?v=234f58d6-0d0b-4451-bc3f-19f7d0bb92da&sc_lang_temp=en)

<sup>12</sup>ibid

<sup>13</sup>Success in Disruptive Times: PMI's 2018 Pulse of the Profession by Mike Clayton, <https://onlinepmcourses.com/success-disruptive-times-pmi-pulse-profession/>

<sup>13</sup>Success in Disruptive Times: PMI's 2018 Pulse of the Profession by Mike Clayton, <https://onlinepmcourses.com/success-disruptive-times-pmi-pulse-profession/>

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<sup>14</sup>The Future of Work: Leading the Way with PMTQ, PMI Pulse of the Profession, March 2019, [https://www.pmi.org/-/media/pmi/documents/public/pdf/learning/thought-leadership/pulse/pulse-of-the-profession-2019.pdf?v=ff445571-0b23-4a2b-a989-44eb20df55bd&sc\\_lang\\_temp=en](https://www.pmi.org/-/media/pmi/documents/public/pdf/learning/thought-leadership/pulse/pulse-of-the-profession-2019.pdf?v=ff445571-0b23-4a2b-a989-44eb20df55bd&sc_lang_temp=en)

<sup>15</sup>ibid

<sup>16</sup> “Innovation – Changing the Game”, by Tegan Jones, 11 July 2018, in a [Projectified™ with PMI Podcast](#)