

University of Maryland

# Project Management Symposium

*NEXT SESSION*

## Systems Thinking Boosts Project Outcomes

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A.J. CLARK SCHOOL OF ENGINEERING  
Civil & Environmental Engineering Department

*This session will be recorded.*

2024 UMD Project Management Symposium

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Keith Rosenbaum, JD, CAPM



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# Daniel Daly, MSPM, PMP



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- Bachelor of Science, Psychology, Virginia Tech: 1983



- Project Management Institute  
Project Management Professional (PMP): 2005



- The George Washington University  
Master of Science in Project Management: 2009



- NASA Academy of Program/Project and Engineering Leadership  
Knowledge Services (NASA APPEL KS)  
Project Management Curriculum Lead (2010 – 2022)



- Project Management Institute - Knowledge Programs Manager



# Keith Rosenbaum, JD, CAPM



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Civil & Environmental Engineering Department



- Bachelor of Arts, History, New York University: 1991



- Juris Doctorate, Touro College School of Law: 1995



- Project Management Institute: 2007 - Present, Knowledge Programs Specialist



- Certified Associate in Project Management (CAPM): 2019



# Learning Objectives for Today's Session



- Define Systems Thinking
- Incorporate Systems Thinking as a Model for Problem-Solving
- Adopt a Systems Thinking Mindset to Improve Decision-Making
- Add Systems Thinking to Expand Your Project Management Toolkit





# Define Systems Thinking

“Pull a thread here  
and you’ll find it’s  
attached to the rest of  
the world.”

— Nadeem Aslam, novelist

## Thinking Systemically



**Systems thinking uses habits, tools and concepts to develop an understanding of the interdependent nature of complex systems.**

**When people have a better understanding of systems, they are better able to identify actions that lead to desired outcomes.**



A decorative graphic consisting of three overlapping, stylized arrows pointing to the right, colored red, yellow, and black.

# Employ Systems Thinking Within Complex Projects

- “In this environment of continual churn, systems thinking considers mitigating factors which have direct impact on overall project outcomes and allows for the interconnectivity of dependencies to be weighed against each other...” **Daniel Daly, MSPM, PMP, PMI Knowledge Programs**



# Key Takeaways



- A system is a whole that cannot be divided into independent parts.
- A system is a product of the interaction of its parts.
- The performance of a system depends on how the parts fit together, not how they act taken separately.





# Incorporate Systems Thinking as a Model for Problem-Solving

- “Systems thinking is a cognitive process that can aid project managers through the employment of logic to solve problems that range from challenges responding to simple rules to dilemmas that are verging on complex,”  
- **Richard A. McConnell, DM, Lieutenant Colonel, U.S. Army (Retired)**



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# Key Takeaways

- Systems thinking is a valuable model to make sense out of a complicated problem, especially in a high-risk environment and under a time constraint.
- Understanding the distinct parts of a problem (WBS, for example) and the complex interactions between those parts is the first step to designing a solution.



## Adopt a Systems Thinking Mindset to Improve Decision-Making

- “Systems thinking provides an outstanding possibility to improve decision-making by understanding the context and impact of feedback loops that determine the system dynamics. While we all want to make the best decisions, the complexity surrounding us does not make it a simple task.” -  
**Lenka Pincot, PMI-ACP, PMP, PMI-PBA, PMI Chief of Staff to the President**



# Key Takeaways



- Understanding the impact feedback loops have on decision-making is essential for learning and responding to change.
- Identifying system leverage points can help you focus on the activities that will be the most efficient way to impact outcomes.





# Add Systems Thinking to Expand Your Project Management Toolkit

- Thinking systemically enables all project professionals — including program managers, project managers, systems engineers and business analysts — to weigh differing perspectives against each other to help organize and evaluate competing priorities.
- It allows for better insight and effective decision-making within the intricate functions of multifaceted organizations and aids practitioners to envision the unintended consequences when seeking solutions to wicked problems.





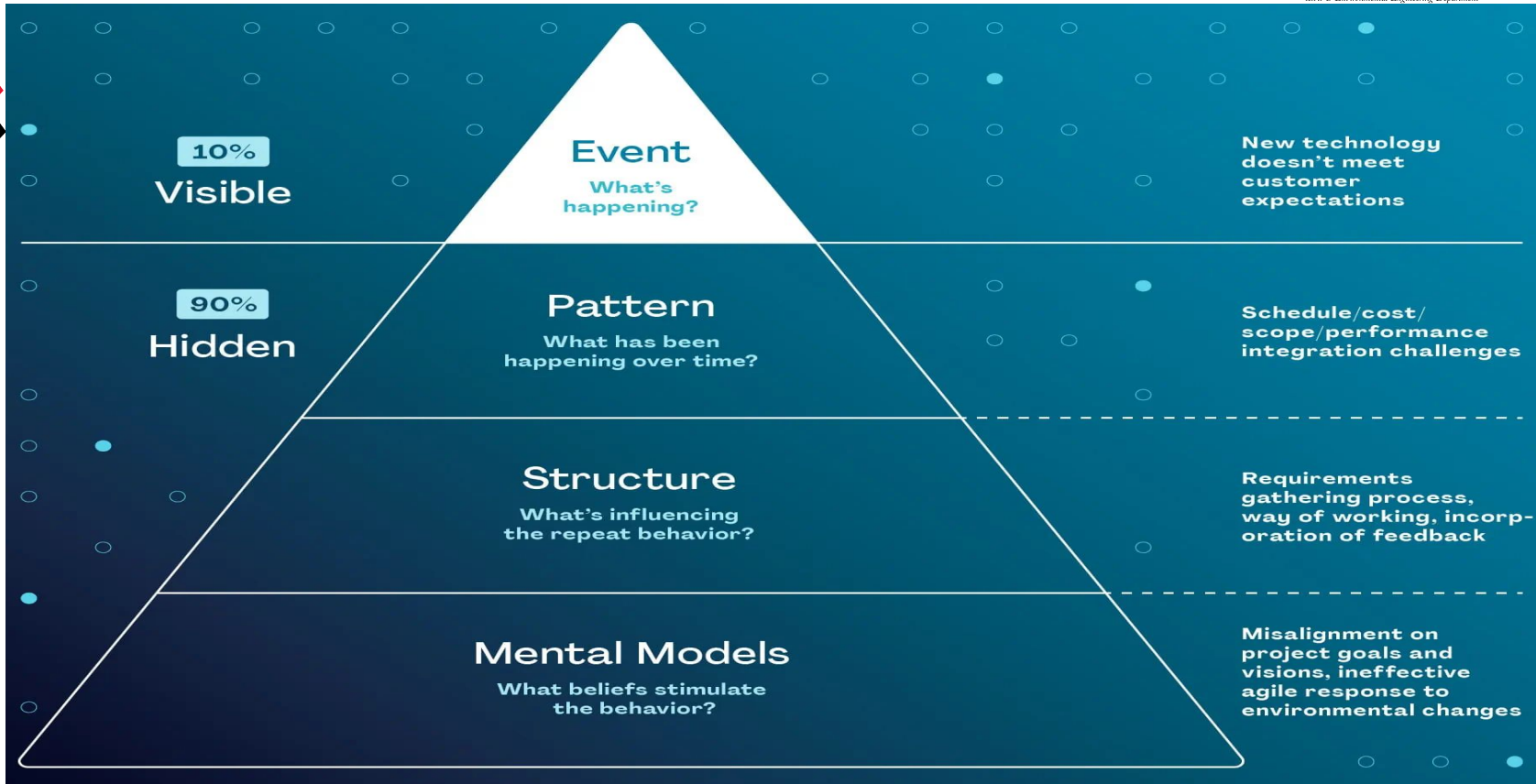
# Key Takeaway -The Iceberg Model

*"Systems thinkers like to use the metaphor of an iceberg. We see the iceberg's tip, perhaps ramming a ship. But 90% of the iceberg's mass is underwater, shaping ocean currents and the iceberg's behavior at its tip. Pattern is the submerged mass, and awareness of it illuminates specific events."* -

**Ju Young Lee, PhD,**  
**Postdoctoral Associate at the Center for Building Sustainable Value Ivey Business School**



# Key Takeaway -The Iceberg Model



# Why Would You Apply a Systems Thinking Mindset When Managing Your Projects?

- To manage complex organizational relationships (3 votes)
- To balance interdependent project outcomes (3 votes)
- To improve decision-making (5 votes)
- To provide a framework for problem-solving (4 votes)
- All of the above (92 votes)
- Systems thinking is currently not part of my project management skill-set (5 votes)



Total Responses: 112

\*Results from poll conducted from November 2023 to January 2024 on [projectmanagement.com](https://projectmanagement.com)







# Conclusion

- Systems Thinking allows project professionals:
  - To better manage complex organizational relationships
  - To balance interdependent project outcomes
  - To improve decision-making
  - To provide a framework for problem-solving



# Final Thought/Summary



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“

The best project managers are those who can navigate the unknown, turning ambiguity into clarity and complexity into simplicity.

”

 Antonio Nieto-Rodriguez



A decorative graphic consisting of three overlapping, stylized arrow shapes pointing to the right, colored red, yellow, and black.

# PMI References

- [A Guide to the Project Management Body of Knowledge \(PMBOK® Guide\) – Seventh Edition \(and The Standard for Project Management \[Section 3.5\]\)](#)
- [Is There Something Going Wrong on Your Project? Look for System Behavioral Archetypes](#)
- [Systems Thinking and How It Can Be Applied to Frameworks and Methods](#)
- [Systems Thinking Boosts Project Outcomes](#)
- [The Implications of Systems Thinking and Complex Systems](#)
- [Wicked Problem Solving®](#)



# More Systems Thinking Content

- Ackoff, R. L. (1994). [Systems thinking and thinking systems](#). *System Dynamics Review*, Summer–Fall, 175–188.
- Benson, T., & Marlin, S. (2021). [The habit-forming guide to becoming a systems thinker](#) (2nd ed.). Waters Center for Systems Thinking.
- Boogaard, Kat (2024), [Project Management Trends and Predictions for 2024](#).
- Cabrera, D., & Cabrera, L. (2018). [Systems thinking made simple: New hope for solving wicked problems](#) (2nd ed.). Plectica.
- Gharajedaghi, J. (2011). [Systems thinking: Managing chaos and complexity: A platform for designing business architecture](#) (3rd ed.). Morgan Kaufmann.
- Gozluklu, B., & Sterman, J. D. (2022, February 26). [System dynamics to understand and improve the performance of complex projects](#). MIT Sloan.
- Herrera de Leon, H. J., & Kopainsky, B. (2020). [Do you bend or break? System dynamics in resilience planning for food security](#). *System Dynamics Review*, 35(4), 283–379.  
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- Lewis, M. (2015). [The big short: Inside the doomsday machine](#) (movie tie-in ed.). W. W. Norton & Company.





# Questions?

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# Evaluate Session

