



PROJECT MANAGEMENT
CENTER FOR EXCELLENCE

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

UNIVERSITY OF MARYLAND
2026 PROJECT MANAGEMENT SYMPOSIUM

Using GenAI to Validate & Improve Project Schedules

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My First Encounter



Prompt: Create an image of a Victorian woman in a green, lacy dress on an English green rolling hillside, wearing a hat, the wind blowing gently, overcast with clouds, as she looks off into the distance





What Will You Learn?

- Recap of risk management & GenAI
- Simple way to use GenAI to assess project schedule risks
- Schedule tool risks: ADO & MS Project
- Creating a Prompt Toolkit





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Definition of Risk

**Bad things that negatively
impact your project**





Risk Management

- Comprehensive proactive, iterative, repeatable risk and mitigation process
- Issue and risk logs are tools of risk management, but are reactive & passive

Prompt: List the limitations of issue and risk logs for managing IT project risks.





GenAI Risk Analysis Uses



- 40-70 % project have problems*
- GenAI is Agile & provides:
 - Information
 - How to & guidance
 - Comparisons & analysis
 - Mitigation & recommendations
 - Productivity & content creation

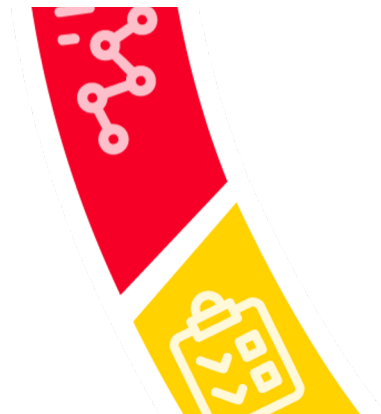
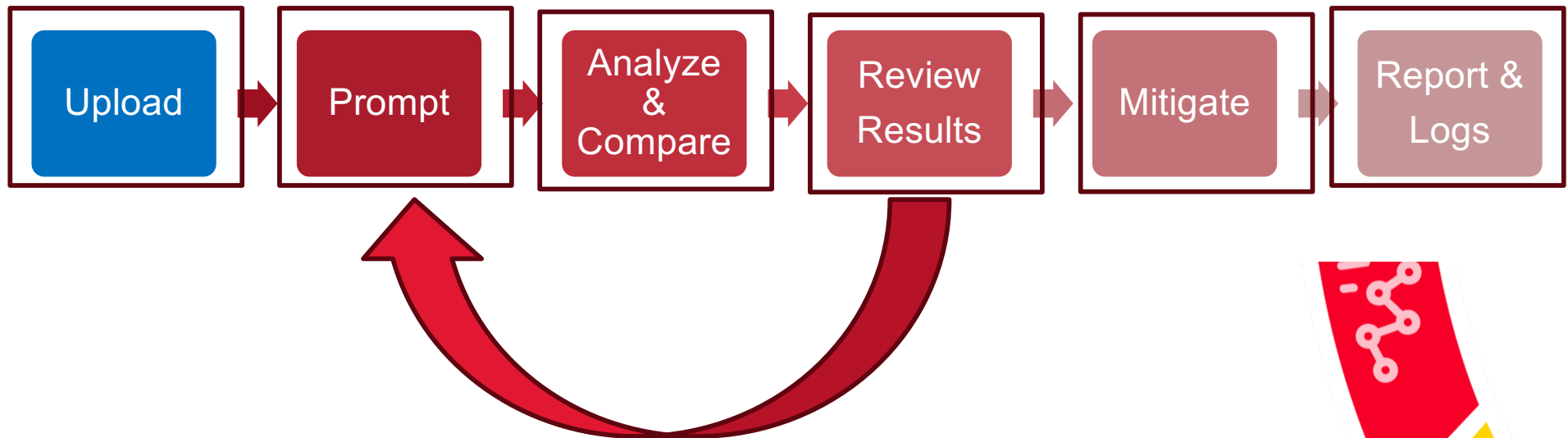


*Chaos Report (2020), McKinsey & Company (2025), PMI Pulse of the Profession (2025)





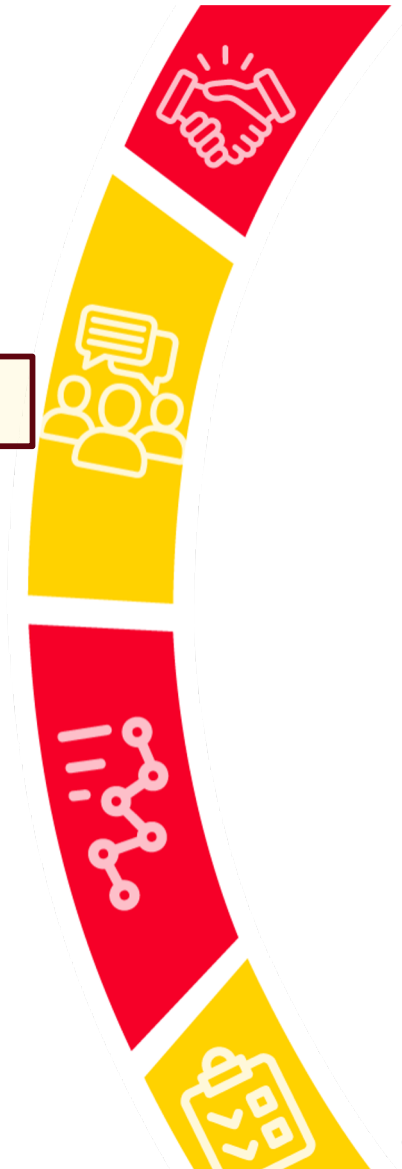
Simple GenAI Risk Analysis Process





GenAI Considerations

- Simple, sequential, & iterative prompts
- Use templates & uploads for analysis
- Knowledge & creativity are critical
- Know AI limitations – Validate AI results
- Garbage in results in garbage out





Schedule Considerations

- No two schedules are the same
- Schedules should cover the full project
- Agile stories should have tasks, sprints should have an SLDC structure to organize tasks, & hybrid requirements & specifications should have tasks
- Goal: realistic task, cost, & timeline estimates





Top Schedule Risks

- Incomplete stories & requirements, & no backlog decomposition
- Hidden dependencies across teams, functionality, data, and integrations
- Underestimating OCM, testing, data migration, and business readiness





Story Decomposition

Create a list of issues and problems an Agile project might experience if its backlog stories are not decomposed to the task level for overall project planning and sprint execution

If Agile backlog stories are not decomposed into task-level work items, the project can encounter significant planning, execution, and control issues. Below is a structured list aligned to PMO audit and risk management thinking (useful for your risk models and CIO dashboards):

● Planning & Estimation Problems

- **Inaccurate effort estimation** – Story-level estimates lack the granularity needed for realistic planning.
- **Hidden complexity** – Critical technical steps remain unidentified until late in execution.
- **Unreliable sprint forecasting** – Velocity become ↓ consistent because work is not fully understood.
- **Overcommitment in sprints** – Teams commit to stories without understanding actual workload.

+ Ask anything





Sprint Schedule Risks

List bullet points for performing a task risk analysis on a sprint schedule and the Sprint SDLC phase it is in

Here is a **structured, PMO-level task risk analysis checklist** aligned to **Sprint SDLC phases** (useful for your audit models, GenAI prompts, and CIO dashboards):

Sprint Task Risk Analysis by SDLC Phase

1. Backlog Refinement / Planning Phase

- Verify stories are decomposed into **task-level work items**
- Confirm each task has a **clear description and acceptance criteria alignment**
- Validate **task dependencies** are identified and **sequenced**
- Assess whether tasks align to **Definition of Ready (DoR)**

+ Ask anything





Hybrid Schedule Risks

List bullet points for performing a task risk analysis on a hybrid schedule review list tasks by phase, activity and by Sprint SDLC phases

Below is a **structured, PMO-ready task risk analysis checklist** tailored for a **hybrid (Agile + Waterfall) schedule review**, organized three ways:

- By Phase (Project Lifecycle)
- By Activity (Risk Analysis Steps)
- By Sprint SDLC Phases (Agile Execution Layer)

This aligns well with your **PMI + NIST-style control mindset** and can be directly converted into an audit tool or scoring model.

◆ 1. Task Risk Analysis by Hybrid Project Phases





Sprint Plan Risks

Extract to Excel > Reformat for Risk Analysis

sprint ID	Phase	Sprint Name	Start	Finish	Sprint Deliverable	Duration	Assigned To	% Complete	Status
	Release	Release Train Sourcing, Contracts, Vendor Info	2/24/2020	4/20/2021		302d		31%	In Progress
	Section	TO 8 Contract Approval Workflows	2/24/2020	5/26/2020		67d		100%	Complete
	Sub-Section	Approval Workflow Sessions	2/24/2020	4/27/2020	TO 8_01	46d		100%	Complete
1	Deep Dive	OSP	2/24/2020	4/8/2020		33d		100%	Complete
1	Deep Dive	DGS (CONSTRUCTION / A&E)	2/24/2020	4/8/2020		33d		100%	Complete
1	Deep Dive	DGS (GOODS & SERVICES)	2/24/2020	4/8/2020		33d		100%	Complete
1	Deep Dive	IT (IT AND PROFESSIONAL SRVS)	2/24/2020	4/8/2020		33d		100%	Complete
2	Deep Dive	DPSCS	2/24/2020	4/27/2020		46d		100%	Complete
3	Deep Dive	MDH	2/24/2020	4/17/2020		40d		100%	Complete
4	Deep Dive	DHR (DHS)	2/25/2020	4/20/2020		40d		100%	Complete
5	Deep Dive	TSO (MDOT)	2/25/2020	4/13/2020		35d		100%	Complete
5	Deep Dive	MDOT - TSO	2/25/2020	4/10/2020		34d		100%	Complete
5	Deep Dive	MARYLAND TRANSPORTATION AUTHORITY (MDT)	2/25/2020	4/10/2020		34d		100%	Complete
5	Deep Dive	MARYLAND AVIATION ADMINISTRATION (MAA)	2/25/2020	4/10/2020		34d		100%	Complete
5	Deep Dive	MARYLAND TRANSIT ADMINISTRATION (MTA)	2/25/2020	4/10/2020		34d		100%	Complete
5	Deep Dive	MOTOR VEHICLE ADMINISTRATION (MVA)	2/25/2020	4/10/2020		34d		100%	Complete
6	Deep Dive	SHA	2/26/2020	4/13/2020		34d		100%	Complete
7	Deep Dive	Port Authority	2/26/2020	4/13/2020		34d		100%	Complete
	Sub-Section	Discovery Report	4/9/2020	5/18/2020	TO 8_02	28d		100%	Complete
	Discovery Report	OSP	4/9/2020	4/29/2020		15d		100%	Complete

Prompt: Read the upload sprint plan and identify sprint plan risks



Sprint Plan Risks



Key Sprint Plan Risk Findings

1. Structural & Planning Risks

- **Missing Sprint IDs:** Several rows have null Sprint IDs → indicates poor traceability and weak sprint grouping.
- **Mixed hierarchy (Release / Section / Sub-Section / Tasks):**
 - Blending roadmap structure with execution tasks creates planning ambiguity.
- **Lack of clear task decomposition:**
 - High-level entries (e.g., "Deep Dive") appear multiple times without clear subtask breakdown.

👉 **Risk:** Incomplete decomposition → inaccurate estimates, hidden work, missed dependencies.

2. Progress & Status Integrity Risks





Sprint SLDC Risks

Extract to CSV > Reformat for Risk Analysis

ID	Epic	Story	Login Sprint Tasks	Assigned	Duration (hrs)	Start	Finis.
983	1	29	Sprint planning in SpiraTeam	JB	4	Mon 10/09/23	Mon 10/09/23
1017	1	29	Review Login Story	JB	4	Mon 10/09/23	Mon 10/09/23
1059	1	29	Design login	JB	8	Mon 10/10/23	Mon 10/10/23
1222	1	29	prototype login	JB	16	Mon 10/13/23	Mon 10/13/23
1223	1	29	review login with stakeholders	JB	1	Mon 10/14/23	Mon 10/14/23
1711	1	29	Test login	JB	2	Mon 10/14/23	Mon 10/14/23
1712	1	29	update database	JB	4	Mon 10/15/23	Mon 10/15/23
1713	1	29	conversion of security roles	JB	8	Mon 10/16/23	Mon 10/16/23
1714	1	29	define test cases in spiratteam	JB	1	Mon 10/17/23	Mon 10/17/23
1715	1	29	final "done" review	JB	1	Mon 10/17/23	Mon 10/17/23
	1	29	move to build	JB	3	Mon 10/18/23	Mon 10/18/23

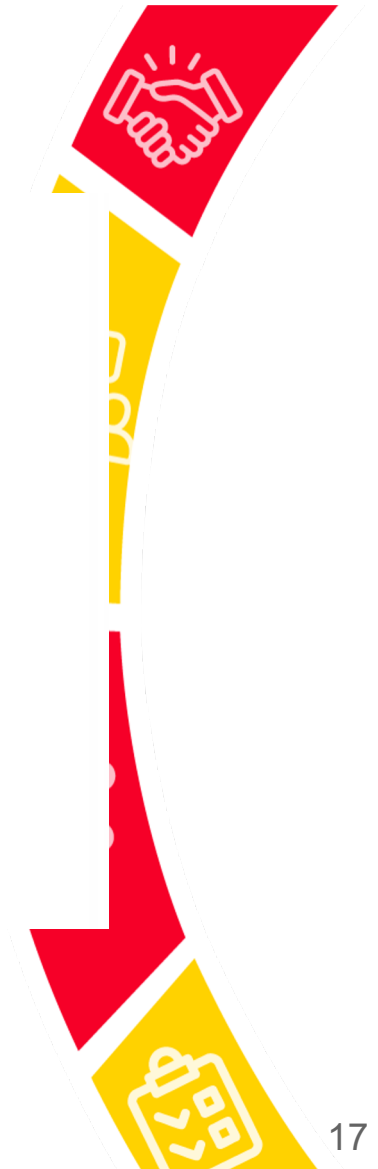
Prompt: Read the upload sprint and identify sprint SDLC risks



Sprint SDLC Risks

1. Key Observations from the Sprint File

- Tasks are listed at a granular level (good)
- Each task has:
 - Duration (hrs)
 - Assigned resource
 - Start/Finish (same day in most cases)
- Multiple tasks appear to be:
 - 1-day or single-point estimates
 - Sequential but not explicitly linked
- No visible:
 - Dependencies
 - Status/progress tracking
 - SDLC phase tagging
 - Acceptance criteria linkage





Detailed Prompt Example

Create a **detailed Agile sprint schedule** for a CRM implementation project. **Organize the work by release, sprint, user story, and task.** Include **task-level detail for backlog refinement, fit-gap review, requirements clarification, story decomposition, configuration, custom development, integration development, data migration preparation, report/dashboard development, security role setup, testing, defect correction, stakeholder demos, training preparation, release readiness, deployment, and hypercare.** For each task provide role, effort hours, duration, dependencies, start date, finish date, and deliverables. Include governance, architecture review, security review, and business approval checkpoints across the sprints. **Then evaluate the sprint schedule for missing work, under-decomposed stories, unrealistic estimates, dependency risks, and release risks.** Assume the audience is an experienced project manager and produce the schedule at a level detailed enough to load into Excel, Microsoft Project, Jira, or Azure DevOps.





ADO vs MS Project

Main risks: Azure Boards not a full scheduling tool and Microsoft Project not the best day-to-day Agile execution tool.

Azure Boards Risks:

- Weak dependency and timeline modeling
- Loss of visibility into a realistic end-to-end schedule
- Inconsistent date usage and planning confusion
- Limited support for detailed schedule analysis
- Detailed schedule analysis is not its core strength.

Microsoft Project Risks:

- Over-planning and false precision
- Weak fit for daily Agile workflow
- Poor traceability from epic to story to task in execution
- Lower team adoption for developers and Scrum teams
- Developers and product teams often prefer working with Agile boards





Optimized Solution Use Both

Azure Boards

- Backlog
 - epics
 - features
 - user stories
- Documentation
- Sprint tasks
- Defects
- Daily status
- Burndown/up & sprint flow

Microsoft Project

- program milestones
- release roadmap
- cross-workstream dependencies
- testing cycles
- data migration windows
- training rollout dates
- go-live schedule
- executive reporting





Risk Audit Worksheet



F1 ✕ ✓ fx Comments						
	A	B	C	D	E	F
	ID	Category	Question	Score (1-5)	Status (Red/Amber/Green)	Comments
1	1	Backlog Management	Are epics clearly defined and aligned to business objectives?			
2	2	Backlog Management	Are user stories decomposed into actionable tasks?			
3	3	Backlog Management	Are acceptance criteria defined for all stories?			
4	4	Backlog Management	Is backlog prioritized based on business value?			
5	5	Backlog Management	Are dependencies between backlog items identified?			
6						





Prompt Library Workbook



	A	B	C	D
1	AI-Driven MS Project Schedule Audit Tool			
2				
3	Steps:			
4	1. Export your MS Project schedule to Excel and paste into the 'Raw Schedule' tab.			
5	2. Copy data into ChatGPT using prompts in the 'Prompt Library' tab.			
6	3. Record findings in the 'Audit Scoring' tab.			
7	4. Review automated scoring and maturity level.			
8				
9	Scoring:			
10	0 = No / Poor			
11	1 = Partial			
12	2 = Yes / Strong			
13				
14				
15				
16				
17				
18				
19				
20				
< > Instructions Raw Schedule Prompt Library Audit Scoring Dashboard +				





Final Thoughts

- The biggest risk to a project is resistance to change
- Inflated skill claims
- GenAI Risk analysis can be easy, quick, & provide a variety of risk outputs to improve all aspects of your project. GenAI can help you be better project managers.





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Questions & Evaluation

Evaluate Session:



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