

Process Capability & Launch Readiness Copilot

Phase 1 Strategic Pilot Proposal
EPD 522 Capstone Project
Praharshith Jamalapuram 9082624322 | 16th Dec'25

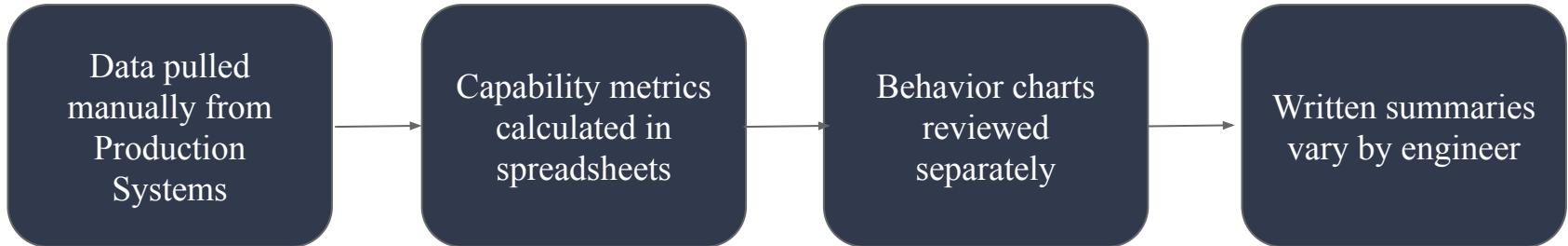
Pain Points:

- Engineers manually extract data and run capability analysis
- Process behavior and capability are interpreted differently across teams
- Leadership receives inconsistent summaries for launch decisions

Relevance:

- Slow response to quality risks
- Increased chance of misinterpreting unstable processes
- Limited ability to scale reviews across processes

Current Approach & Gaps



Key Gaps: Time Intensive; Hard to scale; Inconsistent interpretation

Pilot Purposes

Primary Problem Question:

Is this process stable and capable enough to support a product launch or volume ramp?

System's Limitations:

- Does not approve launches
- Does not automate corrective actions
- Does not replace engineering judgment

Pilot Scope

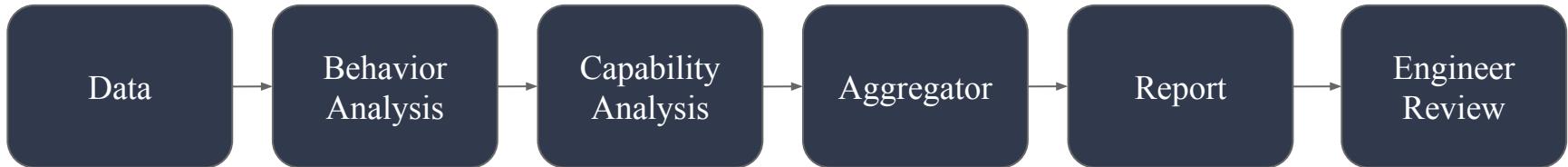
In Scope:

- One product family
- One critical process characteristic
- Two representative datasets
- Structured engineering and management outputs

Out of Scope:

- Production system integration
- Autonomous decisions
- Automated process changes

Solution Approach & Principle



Key Principle:

- Mirrors how engineers already work
- Improves consistency and speed

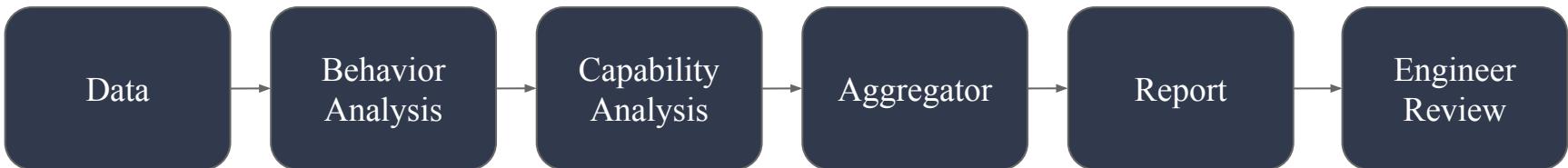
Conceptual AI Design

Why Agentic AI:

- Separates analysis from interpretation
- Uses tools for calculations
- Uses AI for explanation and reporting

Design Choice:

- Numbers come from deterministic tools
- AI focuses on context, clarity, and communication



Benefits

- Faster and more consistent reviews
- Reduced manual reporting effort
- Clearer summaries for leadership
- Scalable pattern for future processes
- Foundation for responsible AI adoption

Risks & Mitigations



Key risks

- Misinterpretation of results
- Over trust in AI outputs
- Data configuration errors

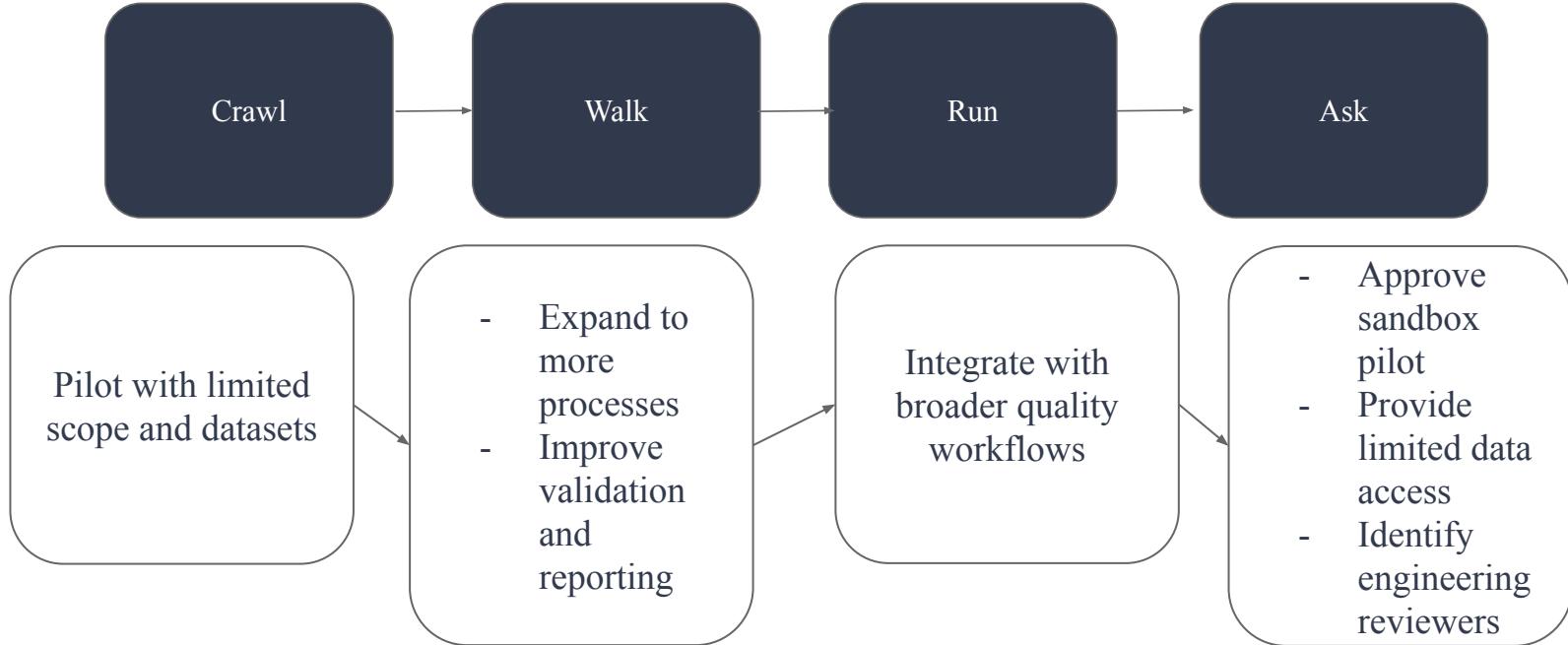
Mitigations

- Tool based calculations
- Explicit human review
- Conservative interpretation rules

Risk Controls

- Engineers review all outputs
- Stability is checked before capability interpretation
- Clear warnings when assumptions are violated
- Prevents over reliance on AI
- Preserves accountability
- Builds trust with engineering teams

Roadmap & Ask



Thank You

Phase 1 Strategic Pilot Proposal
EPD 522 Capstone Project
Praharshith Jamalapuram 9082624322 | 16th Dec'25