**AI Enabled Problem-Solving Playbook**

A comprehensive practitioner's playbook for leveraging AI capabilities to solve business and operational issues. AI Enabled Problem-Solving is a non-linear approach that moves farther and faster in achieving organizational objectives by applying data-first and AI-first principles within proven problem-solving structures.

**Audience:** Non-technical professionals involved in process improvement and AI-enabled problem-solving.

**Estimated Duration:** 260 minutes

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# Module 1: Playbook Overview

*Introduction to the AI Enabled Problem-Solving framework, its principles, and the playbook structure.*

**Duration:** 30 minutes

**Learning Objectives:**

* Understand the purpose and scope of the Practitioners Playbook
* Learn the two core principles: Data First and AI First
* Familiarize with core activities and playbook structure

# Welcome to the Practitioners Playbook

This playbook is a comprehensive guide for practitioners leveraging AI capabilities to facilitate new ways of working. **AI Enabled Problem-Solving**  is a non-linear approach to business and operational improvement work that moves farther and faster in achieving an organization's objectives.

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| **Introduction to the AI Enabled Problem-Solving Framework** |
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*[ProcessFlow: no steps]*

# Playbook Objectives

This playbook is a comprehensive guide for practitioners leveraging AI capabilities to facilitate new ways of working.

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| **What It Is NOT** | | **What It IS** |
| * A prescriptive, one-size-fits-all solution. * A replacement for your organization's AI policies. * A substitute for specific subject matter expertise. * A specific tool recommendation. | | * A practical framework for augmenting work with AI. * Guidance on leveraging AI tools and methodologies. * Illustrative examples with mock data for learning. * AI tool-agnostic approaches. * Best practices for organizational change readiness. |
| **Important Distinction**  This playbook provides guidance and frameworks — it does not replace your organization's specific AI policies, data governance frameworks, or subject matter expertise. Always align with organizational policies. | | |

# Guiding Principles

This playbook is designed to be **generic and agnostic** to any specific tools, processes, or organizational structures. Always align with your organizational policies and governance frameworks.

## Core Design Principles

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| **Broad Application**  Principles apply across industries, company sizes, and business contexts. These methods work whether you're executing improvements within a telecommunications company or a financial services firm. |
| **High-Level Methods**  The playbook is guidance-driven without prioritizing any specific improvement methodology over another. It provides exemplary approaches and techniques that can be adapted to your organization's existing practices and maturity level. |
| **Illustrative Examples**  Mock data and scenarios demonstrate concepts without real data exposure. The Metro Cable case study brings every concept to life through practical application. |
| **Policy Compliant**  Always defer to your organizational data and AI governance policies. This playbook provides a framework — your organization provides the guardrails. |

# Introducing AI Enabled Problem-Solving

The AI Enabled Problem-Solving is a non-linear approach that leverages Artificial Intelligence and emerging technologies to move much farther and faster in achieving an organization's objectives.

## Two Core Principles

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| * **Data First** – ingest and interrogate the data landscape to reveal and verify evidence-based opportunities * **AI First** – design solutions that take full advantage of AI capabilities to make quantum gains in efficiency |
| **Note:** Activities are iterative and frequently done concurrently to quickly yield "best fit" solutions. AI-Enabled Problem-Solving is not a waterfall process — it thrives on parallel execution and continuous feedback. |

# Playbook Structure

Each section showcases exemplary methodologies, approaches, and techniques tied to key topics.

## Section I: Practitioners Playbook

* **Chapter I: AI-Empowered Problem-Solving**
  + Diagnose Data with AI
  + Prioritize Opportunities
* **Chapter II: AI Tool / Solution Development & Agile Delivery**
  + Design / Prototype AI Tools
  + Consider Agile Delivery Approach

## Section II: Performance Management & Sustainment

* Structure, Support, and Feedback framework
* Sustain Improvements through continuous monitoring
* Manage Performance with scorecards and goal setting

## Section III: Organizational Change Management

* Change Readiness Baseline and Assessment
* Influence Network Mapping
* Communications Management
* Governance Framework

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| **How to Use This Playbook**  Each section builds on the previous, but the process is inherently non-linear. You may find yourself revisiting earlier sections as new data and insights emerge. The playbook is designed to support this iterative approach. |

**Module 1 Knowledge Check**

*Test your understanding of the framework, guiding principles, and playbook structure.*

**1. The two guiding principles of AI-Enabled Problem-Solving are 'Data First' and 'AI First.'**

[ ] True [ ] False

**2. Which of the following best describes the AI-Enabled Problem-Solving approach?**

A) A linear, phase-gated waterfall methodology

B) A non-linear approach that moves farther and faster using AI

C) A technology-only implementation framework

D) A traditional Six Sigma process improvement method

*Your answer: \_\_\_\_\_*

**3. Rank the three major sections of the Playbook in the order they appear:**

*Items to rank:*

• Practitioners Playbook (AI-Empowered Problem-Solving & Tool Development)

• Performance Management & Sustainment

• Organizational Change Management

*Your ranking:*

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Answer Key**

**1. True**

*Correct. The AI-Enabled Problem-Solving approach is built on two core principles: Data First (grounding decisions in evidence) and AI First (leveraging AI as the primary analytical tool).*

**2. B**

*The AI-Enabled Problem-Solving provides a non-linear approach that moves farther and faster in achieving organizational objectives by applying data-first and AI-first principles within proven problem-solving structures.*

**3. 1. Practitioners Playbook (AI-Empowered Problem-Solving & Tool Development); 2. Performance Management & Sustainment; 3. Change Management**

*The playbook follows a logical progression: first diagnose and build (Practitioners Playbook), then sustain (Performance Management & Sustainment), then manage the human side of change (Change Management).*

# Module 2: AI-Empowered Problem-Solving

*Leverage AI to diagnose organizational challenges and identify key opportunities through data-driven insights.*

**Duration:** 75 minutes

**Learning Objectives:**

* Structure problems using problem statements and issues trees
* Apply hypothesis testing to validate operational gaps
* Use AI for data visualization, analysis, and research
* Synthesize findings into actionable opportunities
* Prioritize key opportunities

# AI-Empowered Problem-Solving

This chapter focuses on leveraging AI to diagnose organizational challenges and identify key opportunities through data-driven insights. Rather than solely relying on stakeholder interviews and assumptions, this approach starts with data and uses AI to accelerate every stage of analysis.

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| **Two-Phase Approach** |

Each activity feeds back into the others. A finding from diagnosis may trigger a new data request, and synthesis may reveal gaps that require additional analysis cycles.

## Phase 1: Diagnosis

## Phase 1 is an iterative process that begins by connecting data sources to reveal hidden operational patterns and anomalies using AI-driven discovery. The discovery process is followed by AI-assisted diagnosis to validate hypotheses and reveal evidence-based insights. Finally, these findings are synthesized and translated into a coherent set of actionable opportunities with solid value levers for the organization.

## Phase 2: Prioritization

Once opportunities are identified and documented, Phase 2 applies structured scoring methods to rank them by impact, feasibility, time criticality, and strategic alignment. This transforms a list of possibilities into a sequenced roadmap that stakeholders can review and act on.

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| **Why This Matters**  Traditional problem-solving can take weeks of interviews and workshops before a single insight emerges. With AI-empowered diagnosis, practitioners can surface data-driven insights within hours, then validate those insights with stakeholders — dramatically accelerating time to action. |

The lessons that follow walk through each part of this process in detail, with practical examples based on a fictional case study involving Metro Cable..

# Diagnosis Overview

The diagnostic process is a 6-step iterative cycle. Unlike traditional linear methodologies, these steps are revisited as new data emerges and hypotheses are tested. Each iteration refines the understanding of the problem and moves practitioners closer to actionable, evidence-based opportunities.

## The 6-Step Iterative Process



## Iterative by Design

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| **Non-Linear Execution**  Activities are not completed once and abandoned. As analysis reveals new patterns, you will return to earlier activities — refining the problem statement, adding branches to the issues tree, or requesting additional data. Each pass deepens diagnostic accuracy. |

## How AI Accelerates Each Activity

| Activity | Traditional Approach | AI-Enabled Approach | |------|---------------------|---------------------| | Problem Statement | Weeks of stakeholder interviews | Data-informed scoping in hours | | Issues Tree | Workshop-based brainstorming | AI-generated MECE decomposition with human refinement | | Data Request | Manual inventory of available data | AI-assisted data landscape mapping | | Hypotheses | Experience-based assumptions | Data-pattern-driven hypothesis generation | | Analysis Plan | AI-suggested analytical approaches | | Analysis & Synthesis | Manual spreadsheet analysis | AI-powered pattern recognition and visualization |

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| **Speed Advantage**  A traditional diagnostic cycle might take 4-6 weeks. With AI assistance, practitioners can complete multiple diagnostic iterations in the same timeframe, producing more robust and data-grounded findings. |

# Problem Statement

A well-crafted <GlossaryTerm term="Problem Statement">Problem Statement</GlossaryTerm> is the foundation of AI-enabled problem-solving. It establishes the boundaries of investigation, aligns stakeholders on scope, and provides the criteria against which all findings and recommendations will be measured.

## The 7 Elements

Every Problem Statement should address these seven elements:

1. **Description** — A clear, concise articulation of the problem or opportunity being investigated. Avoid solution language; focus on the observable gap between current state and desired state.
2. **Customers** — Who is affected by this problem? Identify both internal customers (teams, departments) and external customers (end users, clients) impacted by the current state.
3. **Decision Makers** — Who has the authority to approve recommendations and allocate resources? Identify the specific individuals, not just roles.
4. **Decision Drivers** — What factors will influence how decisions are made? Consider financial thresholds, strategic priorities, regulatory constraints, and organizational risk appetite.
5. **Boundaries** — What is explicitly in scope and out of scope? Clear boundaries prevent scope creep and keep analysis focused.
6. **Success Measures** — How will you know the problem is solved? Define quantifiable metrics (e.g., "reduce average handling time by 15%") rather than vague goals.
7. **Timeframe** — What is the deadline for delivering findings and recommendations? Include interim milestones for iterative check-ins.

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| **Key Principle: The Problem Statement Is a Living Document**  The Problem Statement is drafted initially to be refined throughout the diagnostic process. As data reveals unexpected patterns or stakeholders provide new context, the Problem Statement should be updated to reflect the evolving understanding.. |

## Metro Cable Example

**Stated Business / Operations Concern:** Metro Cable has an upcoming Rate Case with the Public Service Commission (PSC) requesting a 7% basic fee increase for customers. The PSC has a history of reasonableness regarding rate increase for economic reasons when customer satisfaction is high. Currently, Metro Cable customer satisfaction scores are low (55/100 ACSI). Metro Cable leadership in concerned that the Rate Case will fail unless customer satisfaction rating meet or exceed ratings for other utilities (i.e., gas, electric, phone) which historically have been higher (74/100 ACSI).

**Initial Problem Statement:** In the Metro Cable case study, the Problem Statement centered on operational inefficiency in field service dispatch. The description identified a gap between current dispatch accuracy (62%) and the industry benchmark (85%), with customers defined as both field technicians and end subscribers awaiting service.

## Problem Statement Evolution

## An initial problem statement can be derived from early conversations about the issue to be addressed. This draft version can be used as input to render a “first pass” data request.

## Note: There is no “magic” number of cycles needed to refine initial Problem Statements; however, it is unlikely that the initial Problem Statement will remain unrevised once data is fully reviewed. Teams should challenge the Working Problem Statement along will all assumptions and Hypotheses throughout the improvement effort and solution prototyping.

## Crafting the Problem Statement with AI

AI can accelerate Problem Statement development by analyzing initial data to suggest scope boundaries and surface potential success measures. However, the practitioner must validate AI suggestions against stakeholder context and organizational realities.

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| **Avoid Solution Bias**  A Problem Statement should never prescribe a solution. "We need to implement a chatbot" is a solution statement. "Customer wait times exceed industry benchmarks by 40%, driving churn" is a problem statement. Let the data guide you to solutions. |

<ReflectionPrompt question="Think about a current challenge in your organization. Can you frame it as a Problem Statement using the 7 elements? What would be the 'Description' and 'Success Measures' for your problem?" answer="A strong Problem Statement separates the problem from the solution. For example: 'Customer onboarding takes an average of 14 days versus a target of 5 days, resulting in 23% of new customers abandoning the process.' The Description quantifies the gap; the Success Measures would be 'Reduce average onboarding time to 5 days while maintaining quality scores above 4.2/5.'" />

# Issues Tree & Hypotheses

An <GlossaryTerm term="Issues Tree">Issues Tree</GlossaryTerm> decomposes a complex problem into mutually exclusive, collectively exhaustive (MECE) sub-issues. Each branch of the tree becomes a testable area of investigation, and each sub-issue generates one or more hypotheses to be validated through data analysis.

Creating an Issues Tree should be a “team exercise” so that multiple perspectives are considered and can be captured.

## MECE Decomposition

The MECE principle ensures that:

* **Mutually Exclusive** — No overlap between branches. Each data point maps to exactly one branch.
* **Collectively Exhaustive** — All possible causes or factors are covered. No blind spots remain.

AI is particularly effective at generating initial MECE decompositions. Provide the AI with the Problem Statement and ask it to decompose the problem into 4-6 top-level branches, then 2-4 sub-branches beneath each. The team then reviews, refines, and validates the structure.

**Metro Cable Example – Issues Tree**

## Hypothesis Framework

For each branch of the Issues Tree, formulate a Null Hypothesis (H0) and an Alternative Hypothesis (H1):

* **H0 (Null Hypothesis):** The default assumption that no significant relationship or difference exists. Example: "Dispatch routing method has no statistically significant effect on first-visit resolution rate."
* **H1 (Alternative Hypothesis):** The assertion that a meaningful relationship or difference does exist. Example: "AI-optimized dispatch routing improves first-visit resolution rate by at least 10 percentage points."

<BeforeAfter before="We think the dispatch process is broken because technicians complain about it. Let's redesign the routing system." after="H0: Current dispatch routing has no significant effect on first-visit resolution. H1: Geographic clustering in dispatch reduces travel time by >15%. We will test with 6 months of dispatch data against resolution outcomes." beforeLabel="Assumption-Driven" afterLabel="Hypothesis-Driven" />

## Testing and Interpreting Results

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| **Rejecting H0 Does Not Prove Causation**  Rejecting the null hypothesis demonstrates a statistically significant relationship — it does not prove that one variable causes the other. Correlation findings must be supplemented with qualitative validation, domain expertise, and where possible, controlled testing before claiming causation. |

## Building the Tree Iteratively

Start with 3-5 top-level branches and expand as data reveals new dimensions. AI can suggest additional branches based on patterns it finds in the data, but the practitioner must validate each addition against the MECE framework to prevent overlap or gaps.

| Level | Example (Metro Cable) | |-------|----------------------| | L1 Branch | Dispatch Efficiency | | L2 Sub-issue | Geographic routing optimization | | L2 Sub-issue | Technician skill-matching accuracy | | L1 Branch | Customer Experience | | L2 Sub-issue | First-call resolution rate | | L2 Sub-issue | Appointment window accuracy |

# Data Request & Ingestion

Once the Issues Tree and initial hypotheses are established, the practitioner must formally request and ingest the data needed to test them. This step bridges the gap between analytical planning and actual analysis.

## The Data Request

A data request should be specific, structured, and traceable back to the Issues Tree. Each request should include in addition to Owners and Due Date:

* **Data Description** — What specific data is needed (e.g., "dispatch records for the past 12 months including technician ID, job type, travel time, and resolution outcome")
* **Source System** — Where does this data reside? Identify the system of record.
* **Format Requirements** — Preferred file format, schema expectations, and any other needs
* **Time Period** — The date range required for the analysis
* **Granularity** — The level of detail needed (e.g., daily vs. monthly, individual vs. aggregated)
* **Issues Tree Mapping** — Which branch or hypothesis does this data support?

**Metro Cable Example – Initial Data Request**

**Metro Cable Example - Refined Data Request**

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| **Data Governance** |

# Data Visualization

AI-enabled data visualization transforms raw data into interpretable visual patterns far faster than traditional BI tools. By describing what you want to see in natural language, practitioners can generate complex visualizations in seconds, iterate on them rapidly, and uncover patterns that might take hours to find through manual exploration.

## AI-Enabled Visualization Approach

Rather than spending days learning visualization tool syntax or building dashboard configurations, practitioners describe their visualization needs directly to AI. The AI generates visualization, and the practitioner interprets the results and requests refinements.

### Common Visualization Types

| Visualization | Use Case | When to Apply | |--------------|----------|---------------| | Geographic heat maps | Spatial pattern analysis | Service area optimization, regional performance | | Time series plots | Trend identification | Volume patterns, seasonal effects, before/after | | Distribution charts | Spread and outlier analysis | Performance variation, workload balance | | Correlation matrices | Relationship mapping | Multi-variable hypothesis testing | | Sankey diagrams | Process flow analysis | Customer journey, escalation paths |

## Example: Geographic Mapping

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| **You:**  Using the dispatch dataset, create a geographic heat map showing first-visit resolution rates by service zone. Overlay technician home base locations as points. Color-code zones from red (below 60% resolution) to green (above 85% resolution). Include a legend and label the 5 worst-performing zones. | |
| **AI:**  Here is the geographic heat map of first-visit resolution rates across 47 service zones. Key findings: The 5 worst-performing zones (Southeast-12, Northeast-7, Central-3, West-19, South-22) are clustered in areas where average technician travel distance exceeds 45 minutes. Three of these zones have no technician home base within the zone boundary, suggesting a geographic coverage gap rather than a skill gap. | |
| **Speed Advantage** | |

# Curiosity-Enabled Analysis

One of the most important aspects of AI-powered analysis is the removal of the cost barrier to curiosity. In traditional approaches, every analysis takes time to prepare, run, and interpret. Answering multiple questions through data analysis can consume hours and even days. . With AI, the marginal cost of asking one more question is nearly zero — enabling a style of analysis driven by genuine curiosity rather than budget constraints.

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| **Traditional Analysis** | **AI-Enabled Analysis** |
| Analysis is planned weeks in advance. Each question requires a formal work request. Analysts build one chart at a time. Exploring a hunch may take days and must be justified. Many interesting questions may go unasked because the timeline and budget doesn't allow it. | The practitioner has a thought and asks the AI immediately. Results appear in seconds. Follow-up questions chain naturally. A single analysis session can explore 20+ questions across multiple data dimensions. Curiosity is rewarded, not rationed. |

## The Context + Task + Output Framework

To get the best results from AI analysis, structure your prompts using three components:

1. **Context** — Provide the AI with the relevant background. What data is loaded? What has been found so far? What is the overall objective?
2. **Task** — Clearly state what you want the AI to do. Be specific about the analytical method, the variables involved, and any constraints.
3. **Output** — Describe the format you want the results in. A table? A visualization? A narrative summary? Specify the level of detail.

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| **Follow the Thread** |

# Prompt Scoring Exercise

Now it's your turn to practice the Context + Task + Output framework from the previous lesson. In this exercise, you'll write a prompt for a realistic scenario and receive AI-powered feedback on how well you applied each dimension of the C+T+O framework.

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| **Before You Begin** |

# Analysis Validation

Every AI-generated finding must be validated before it can inform decisions. AI models can produce plausible-sounding analysis that is factually incorrect, statistically misleading, or based on flawed assumptions. Rigorous validation is not optional — it is a core AI-Enabled Problem-Solving discipline.

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| **Hallucination Risk**  AI models can "hallucinate" — generating confident, detailed outputs that are partially or entirely fabricated. This risk is especially high when the AI is asked to provide specific numbers, benchmarks, or industry statistics from memory. Always verify AI-generated claims against primary sources. |

## Four Methods for Validating AI Output

Teams should never rely on a single AI tool analysis for key determinations. AI outputs are inherently probabilistic — results can vary even with identical inputs. Use these four methods:

1. **Multiple Runs — Same Tool** — Run the same prompt and data in separate sessions. If conclusions shift between runs, the finding is not robust enough to act on.
2. **Prompt Variations** — Make slight alterations to prompt wording with the same data. Findings that hold across phrasings are more reliable than those sensitive to specific wording.
3. **Cross-Tool Comparison** — Run the same prompt and data through different AI tools. Convergent findings across tools carry more weight than single-tool results.
4. **Cross-Validation** — Ask a second AI tool to explicitly validate or critique the output of the first tool. This adversarial check surfaces assumptions and errors that self-review misses.

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| **Metro Cable Staffing Example**  When analyzing Metro Cable's staffing data, three separate AI runs produced different headline conclusions: "Appropriately Staffed," "Overstaffed," and "Right-Sized." However, all three runs identified the same underlying finding — inefficiencies in role distribution across zones. The consensus theme about distribution was far more reliable than the conflicting headline conclusions. This is why multiple runs matter: look for the patterns that appear consistently, not the headlines that vary. |

## The Validation Framework

A finding is considered a <GlossaryTerm term="Validated Gap">Validated Gap</GlossaryTerm> only when it satisfies all three validation criteria:

1. **Quantitative Validation** — The finding is supported by statistical analysis of the actual data. Results must include confidence intervals, sample sizes, and significance tests where applicable.
2. **Qualitative Validation** — The finding is confirmed by subject matter experts or stakeholders who can attest that it reflects operational reality. Data patterns without qualitative context may be artifacts or anomalies.
3. **<GlossaryTerm term="Benchmark">Benchmark</GlossaryTerm> Validation** — The finding is contextualized against relevant industry benchmarks, historical baselines, or peer comparisons. A metric is only meaningful when compared to a standard.

## Root Cause vs. Symptom

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| **Dig Deeper**  Many initial findings identify symptoms rather than root causes. A high call volume is a symptom; a confusing self-service portal that drives customers to call is a root cause. AI can help trace causal chains, but the practitioner must insist on asking "why?" at least 3-5 times before accepting a finding as a root cause. |

## Validation Checklist

For each finding, confirm:

| Criterion | Question | Status | |-----------|----------|--------| | Quantitative | Is the finding statistically significant with adequate sample size? | | | Qualitative | Have SMEs confirmed this matches operational reality? | | | Benchmark | How does this compare to industry standards or historical baseline? | | | Root Cause | Is this a root cause or a symptom of a deeper issue? | | | Reproducible | Can the analysis be re-run with consistent results? | |

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| **Document Everything**  Record the validation status of every finding in a structured format. Unvalidated findings should be clearly marked as preliminary. This transparency builds stakeholder trust and prevents premature action on unverified insights. |

# AI-Enabled Research

Beyond analyzing internal data, AI accelerates external research — benchmarking against industry standards, identifying best practices, and exploring adjacent domains for transferable solutions. This research capability turns every practitioner into a research team.

## Benchmarking with AI

AI can rapidly compile benchmark data from public sources, industry reports, and academic literature. This enables practitioners to contextualize their findings against external standards within minutes rather than days.

|  |  |
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| **You:**  Research industry benchmarks for First Call Resolution (FCR) in the telecommunications field service sector. Include: (1) overall industry average, (2) top-quartile performance, (3) bottom-quartile performance, (4) trend over the past 5 years, and (5) the primary factors that differentiate top performers from bottom performers. | |
| **AI:**  Based on industry data: (1) The telecommunications field service FCR industry average is 73%. (2) Top-quartile performers achieve 85-92% FCR. (3) Bottom-quartile performers fall below 65% FCR. (4) Industry FCR has improved approximately 2% per year over the past 5 years, driven largely by AI-assisted dispatch and predictive parts inventory. (5) Key differentiators for top performers include: skill-based routing (matching technician certifications to job requirements), predictive parts loading (ensuring the right parts are on the truck), and geographic optimization (minimizing travel time to maximize jobs per day). | |
| **Verify AI Research**  AI-generated benchmarks and statistics must be verified against primary sources. Request citations, cross-reference with published industry reports, and validate with subject matter experts. Use AI research as a starting point for deeper investigation, not as a final source of truth. | |

## Research Applications

* **Industry benchmarking** — How does the client compare to peers?
* **Best practice identification** — What approaches have worked in similar contexts?
* **Technology landscape** — What tools and platforms are available for a given problem?
* **Regulatory context** — What compliance requirements affect potential solutions?
* **Academic literature** — What research supports or challenges the hypotheses?

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| **Sensitivity Analysis**  When AI provides benchmark ranges (e.g., "top-quartile FCR is 85-92%"), use these ranges to run sensitivity analyses on your opportunity sizing. Model the conservative case (85%), the expected case (88%), and the optimistic case (92%) to give stakeholders a realistic view of the opportunity range. |

## Combining Internal and External Research

The most compelling findings emerge when internal data analysis and external research converge. When your data shows a metric at 65% and external benchmarks show top performers at 90%, the gap becomes a quantified, benchmarked opportunity that stakeholders can act on with confidence.

# Data Analysis Plan

A Data Analysis Plan is the tactical document that connects hypotheses to analytical methods. It ensures that analysis is systematic, reproducible, and traceable back to the Issues Tree. Without a plan, analysis can become unfocused exploration that consumes time without generating actionable findings.

## 5 Components of the Analysis Plan

Every analysis plan should include:

1. **Hypothesis Reference** — Which specific hypothesis from the Issues Tree does this analysis address? Include the hypothesis ID and full statement.
2. **Data Requirements** — What specific data fields, time periods, and granularity are needed? Reference the data request tracking document.
3. **Analytical Method** — What statistical or analytical technique will be used? (e.g., correlation analysis, regression, time series decomposition, classification, clustering)
4. **Success Criteria** — What result would confirm or reject the hypothesis? Define the threshold for statistical significance and the minimum effect size that would be operationally meaningful.
5. **Output Specification** — What deliverable will this analysis produce? (e.g., a visualization, a statistical summary, a narrative finding with supporting evidence)

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| **Sequential Prompting**  Structure your AI prompts to follow the analysis plan sequentially. Start each prompt by referencing the hypothesis being tested, then specify the analytical method, then define the output format. This creates a traceable chain from hypothesis to finding that can be reviewed and audited. |

## Building the Plan with AI

AI can assist in drafting the analysis plan itself. Provide the Issues Tree and hypotheses and then prompt the AI to suggest appropriate analytical methods for each hypothesis. As the practitioner you willthen need to review and make adjustments based on data availability and your domain knowledge to finalize the plan.

## The Living Document Concept

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| **Plans Evolve**  The Data Analysis Plan is a living document. As initial analyses generate findings, new questions emerge that require additional analytical passes. Update the plan continuously — add new hypotheses, retire tested ones, and adjust methods based on what the data reveals. Version the plan so that stakeholders can track the evolution of the analytical approach. |

## Example Plan Structure

| # | Hypothesis | Method | Data Fields | Success Criteria | |---|-----------|--------|-------------|-----------------| | 1 | Geographic distance > 30 min reduces FCR | Logistic regression | Travel time, FCR outcome, zone | p < 0.05, OR > 1.5 | | 2 | Certified techs have higher FCR | Chi-square test | Certification status, FCR outcome | p < 0.05, >10pt difference | | 3 | Morning dispatches outperform afternoon | Time series comparison | Dispatch time, FCR, day of week | p < 0.05, >5pt difference | | 4 | Parts availability predicts FCR | Random forest classification | Parts inventory, job type, FCR | Accuracy > 80%, AUC > 0.75 |

# Opportunity Synthesis

Synthesis is the bridge between analysis and action. It transforms validated findings into clearly articulated opportunities, each with quantified impact and a range of potential solutions. This is where as the practitioner, yourjudgment becomes most critical — connecting data patterns to operational improvements.

## From Findings to Opportunities

Not every finding becomes an opportunity. The synthesis process filters validated findings through three lenses:

1. **Magnitude** — Is the gap large enough to warrant action? A statistically significant finding with minimal operational impact may not justify investment.
2. **Actionability** — Can this gap be addressed with available resources and technology? A finding without a feasible solution path remains an observation, not an opportunity.
3. **Alignment** — Does addressing this gap support the organization's strategic priorities? Even large, actionable gaps may be deprioritized if they don't align with current objectives.

## Developing the Option Set

For each opportunity, develop 2-4 solution options that span a range of ambition and investment:

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| **Option Set Design**  Every opportunity should present stakeholders with genuine choices, not a predetermined answer. A well-designed option set typically includes: (1) a quick win with modest investment and near-term payoff, (2) a moderate option balancing investment and impact, (3) a strategic option with significant investment and maximum long-term value, and optionally (4) a do-nothing baseline that quantifies the cost of inaction. |

| Option Type | Investment | Timeline | Impact | Risk | |------------|-----------|----------|--------|------| | Quick Win | Low | 1-3 months | Moderate | Low | | Moderate | Medium | 3-6 months | Significant | Medium | | Strategic | High | 6-18 months | Maximum | Higher | | Do Nothing | None | N/A | Continued decline | Compounding |

|  |
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| **Always Include a Quick Win**  Every option set should include at least one quick win. Quick wins build stakeholder confidence, demonstrate the value of the AI-Enabled Problem-Solving approach, and generate momentum for larger initiatives. They also provide early data points that validate the analytical findings in a real operational setting. |
| **Verify Options**  Options must be grounded in realistic capability assessments. Before presenting a goal, verify with IT, operations, and finance that the required technology, talent, and budget are plausibly attainable. An aspirational option that is clearly not feasible will damage practitioner credibility. |

## 

## Structuring the Synthesis Output

Each synthesized opportunity should be documented with:

* **Opportunity Title** — A clear, action-oriented name
* **Supporting Findings** — The validated data points that justify this opportunity
* **Quantified Impact** — The estimated value in operational metrics and financial terms
* **Option Set** — The 2-4 solution options with comparative analysis
* **Dependencies** — What must be true for each option to succeed
* **Recommended Next Step** — What should happen immediately to advance this opportunity

**Module 2 Knowledge Check**

*Test your understanding of AI-empowered problem-solving, from problem statements to opportunity synthesis.*

**1. Which of the following is a proper Problem Statement rather than a solution statement?**

A) We need to implement a new CRM system

B) Customer wait times exceed industry benchmarks by 40%, driving churn

C) We should hire more customer service representatives

D) The IT department needs to upgrade their servers

*Your answer: \_\_\_\_\_*

**2. Which of the following are elements of a well-crafted Problem Statement? (Select all that apply)** *(Select all that apply)*

[ ] A) Description of the problem

[ ] B) Proposed solution

[ ] C) Success Measures

[ ] D) Decision Makers

[ ] E) Implementation timeline

**3. Match each prompt framework component with its description:**

*Match items from Column A to Column B:*

|  |  |
| --- | --- |
| Context | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Task | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Output | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |

*Answer choices:* Background information and relevant data, Specific analytical action to perform, Desired format and detail level of results

**4. In the AI-Enabled Problem-Solving methodology, you should pre-plan your entire analysis sequence before beginning any data exploration.**

[ ] True [ ] False

**5. Rank the phases of AI-empowered problem-solving in the correct order:**

*Items to rank:*

• Diagnosis & Problem Framing

• Data Collection & Ingestion

• Analysis & Visualization

• Opportunity Synthesis

*Your ranking:*

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**6.** With AI, the marginal cost of asking one more question is nearly **\_\_\_\_\_\_\_\_\_**, enabling analysis driven by genuine **\_\_\_\_\_\_\_\_\_** rather than budget constraints.

**Answer Key**

**1. B**

*A problem statement describes the observable gap between current state and desired state without prescribing a solution. Option B quantifies the gap and its impact.*

**2. A, C, D**

*The 7 elements of a Problem Statement are: Description, Customers, Decision Makers, Decision Drivers, Boundaries, Success Measures, and Timeframe. 'Proposed solution' and 'Implementation timeline' are not part of the framework.*

**3. Context → Background information and relevant data; Task → Specific analytical action to perform; Output → Desired format and detail level of results**

*The Context + Task + Output framework structures AI analysis prompts: Context provides background, Task defines the specific action, and Output specifies the desired format.*

**4. False**

*False. The AI-Enabled Problem-Solving approach recommends starting with a broad question, interpreting the results, and letting curiosity guide the next question. AI makes this exploratory, non-linear approach optimal.*

**5. 1. Diagnosis & Problem Framing; 2. Data Collection & Ingestion; 3. Analysis & Visualization; 4. Opportunity Synthesis**

*The diagnostic process flows from framing the problem, to collecting data, to analyzing and visualizing patterns, and finally synthesizing findings into actionable opportunities.*

**6. "zero", "curiosity"**

*One of AI's most transformative aspects is removing the cost barrier to curiosity, enabling practitioners to explore as many analytical questions as they want.*

# Module 3: Opportunity Prioritization

*Rank and prioritize identified opportunities based on impact, feasibility, and strategic alignment.*

**Duration:** 31 minutes

**Learning Objectives:**

* Document opportunities with structured templates
* Apply WSJF scoring methodology
* Use Value vs. Complexity Matrix for prioritization

# Opportunity Documentation

Before opportunities can be prioritized, they must be documented in a standardized format that enables objective comparison. The opportunity documentation template ensures that every opportunity is described with sufficient rigor to support scoring, stakeholder review, and implementation planning.

## Documentation Template

Every opportunity document should contain these 8 elements:

1. **Opportunity Title** — A concise, action-oriented name that describes the improvement (e.g., "Implement AI-Optimized Dispatch Routing for Field Service")
2. **Problem Summary** — A 2-3 sentence description of the validated gap, referencing the specific data findings that support it
3. **Quantified Impact** — The estimated operational and financial value of closing the gap, including the methodology used to calculate it
4. **Affected Stakeholders** — Who benefits from this improvement and who is impacted by the change
5. **Solution Options** — The 2-4 options developed during synthesis, with comparative investment, timeline, and risk profiles
6. **Dependencies** — Technical, organizational, or resource prerequisites that must be met for implementation
7. **Risks and Mitigations** — Known risks for each solution option and proposed mitigation strategies
8. **Supporting Evidence** — References to specific analyses, visualizations, benchmarks, and stakeholder validations that underpin the opportunity

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| **Use AI to Draft Documentation** |

# Prioritization Methods Overview

With validated opportunities documented, **Phase 2** begins: prioritization. The goal is to rank opportunities based on business value, time criticality, risk reduction, and implementation effort — then sequence them into an actionable roadmap.

AI-Enabled Problem-Solving provides two complementary prioritization methods. The right choice depends on the maturity of your opportunity documentation, the number of opportunities, and the audience.

## Comparing the Two Methods

| Factor | WSJF (Weighted Shortest Job First) | Value vs. Complexity Matrix | |--------|-------------------------------------|------------------------------| | **Complexity** | Higher — scoring 4 dimensions on a 1–10 scale | Lower — qualitative 2×2 grid placement | | **Time Required** | 90–120 minutes for 5–7 opportunities | 45–60 minutes for the same set | | **Best For** | Agile environments, large portfolios (10+ opportunities) | Quick prioritization, smaller sets (3–5) | | **Output** | Rank-ordered list with numerical scores | Quadrant placement with action guidance | | **Stakeholder Buy-In** | Strong — transparent, repeatable scoring justifies decisions | Strong — visual simplicity resonates with executives |

## When to Use Each Method

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| **WSJF**  Use WSJF when opportunities are **well-documented and quantified**, the portfolio is large enough to benefit from precise sequencing, and the audience is comfortable with structured scoring. WSJF produces a defensible, rank-ordered backlog that maps directly to agile delivery planning. |
| **Value vs. Complexity Matrix**  Use the Matrix when opportunities are at an **early stage**, stakeholder alignment is the primary goal, or the portfolio needs rapid triage before deeper analysis. The visual format is one of the most effective executive presentation tools available. |

## Recommended Approach: Use Both

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| **Combine for Maximum Impact**  Start with the **Value vs. Complexity Matrix** in a stakeholder workshop to build consensus on which quadrant each opportunity belongs in. Then apply **WSJF scoring** to the Quick Wins and Strategic Bets quadrants for precise sequencing. This two-pass approach leverages the strengths of both methods: the Matrix builds alignment, WSJF builds the roadmap. |
| **Consistency Over Methodology**  The specific methodology matters less than **consistent application** and stakeholder buy-in. Pick one approach (or the combined approach), apply it rigorously, and use the results to drive decisions. Switching methods mid-process or applying them inconsistently undermines credibility. |

The following lessons walk through each method in detail, with Metro Cable examples showing how scored opportunities translate into implementation roadmaps.

# WSJF Scoring Method

<GlossaryTerm term="WSJF">Weighted Shortest Job First (WSJF)</GlossaryTerm> is a prioritization framework that ranks opportunities by the ratio of their value to their implementation cost. It ensures that the highest-value, lowest-effort opportunities rise to the top of the roadmap.

## The WSJF Formula

**WSJF = Cost of Delay / Job Size**

Where **Cost of Delay** is the sum of three value components:

* **Business Value** — The direct operational or financial impact of implementing this opportunity
* **Time Criticality** — How much value is lost by delaying implementation (regulatory deadlines, competitive pressure, compounding costs)
* **Risk Reduction / Opportunity Enablement** — The degree to which this opportunity reduces organizational risk or enables future opportunities

## Scoring Components

Each component is scored on a relative scale. The recommended approach uses Fibonacci-like values (1, 2, 3, 5, 8, 13) to force meaningful differentiation between items.

| Component | Score 1 (Low) | Score 5 (Medium) | Score 13 (High) | |-----------|--------------|-------------------|-----------------| | Business Value | Marginal efficiency gain, limited scope | Meaningful improvement to a core process | Significant impact on revenue or cost structure | | Time Criticality | No deadline pressure, value stable over time | Moderate urgency, value declines 10-20% per quarter if delayed | Critical deadline or rapidly compounding cost of inaction | | Risk Reduction | Minimal risk mitigation | Addresses a known operational or compliance risk | Eliminates a critical vulnerability or enables a strategic initiative | | Job Size (divisor) | Small effort, 1-2 sprints, existing capabilities | Moderate effort, 3-5 sprints, some new capability needed | Large effort, 6+ sprints, significant new infrastructure or skills |

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| **Job Size Is the Divisor**  Job Size divides the Cost of Delay, so a higher Job Size score results in a lower WSJF priority. This means that large, complex initiatives must deliver proportionally higher value to rank above smaller, simpler ones. This built-in bias toward smaller efforts is intentional — it favors incremental delivery and faster time to value. |
| **T-Shirt Sizing for Speed**  When scoring a large number of opportunities, start with T-shirt sizing (S, M, L, XL) for each component, then convert to numeric scores. This approach is faster for initial triage and can be refined with more precise scoring for the top-ranked items. |

## Generating the Prioritized Roadmap

Once all opportunities are scored, sort them by WSJF score (highest first) to generate the prioritized roadmap.

<PromptExample prompt="Using the WSJF scores in the attached opportunity matrix, create a prioritized implementation roadmap. Group opportunities into three horizons: Horizon 1 (immediate, next 90 days), Horizon 2 (near-term, 90-180 days), and Horizon 3 (strategic, 180+ days). For each horizon, list the opportunities in WSJF priority order with their scores and estimated implementation effort." response="Prioritized Implementation Roadmap:\n\nHorizon 1 (Next 90 Days) — WSJF > 8.0:\n1. AI Dispatch Routing Pilot (WSJF: 13.0, Effort: S)\n2. Technician Skill-Match Algorithm (WSJF: 10.5, Effort: S)\n3. Parts Inventory Prediction Model (WSJF: 8.7, Effort: M)\n\nHorizon 2 (90-180 Days) — WSJF 4.0-8.0:\n4. Customer Self-Service Portal Redesign (WSJF: 6.5, Effort: M)\n5. Predictive Maintenance Alerting (WSJF: 5.2, Effort: L)\n\nHorizon 3 (180+ Days) — WSJF < 4.0:\n6. Full Network Digital Twin (WSJF: 3.1, Effort: XL)\n7. Autonomous Dispatch System (WSJF: 2.8, Effort: XL)" />

# Value vs. Complexity Matrix

The Value vs. Complexity Matrix is a visual prioritization tool that plots opportunities on a 2x2 grid. While less analytically rigorous than WSJF, it provides an intuitive framework for stakeholder discussions and is particularly effective for initial triage or when precise scoring data is not yet available.

## The Four Quadrants

| Quadrant | Value | Complexity | Action | |----------|-------|------------|--------| | **Quick Wins** (top-left) | High | Low | Implement immediately. These deliver the fastest return and build momentum for larger initiatives. | | **Strategic Bets** (top-right) | High | High | Plan carefully. These require large investment but offer significant returns. Sequence after quick wins to leverage early momentum. | | **Fill-Ins** (bottom-left) | Low | Low | Implement opportunistically. These are low-effort improvements that can be bundled with other work or used to fill capacity gaps between larger initiatives. | | **Avoid** (bottom-right) | Low | High | Deprioritize or eliminate. High effort for low return is rarely justified. Revisit only if strategic context changes significantly. |

## When to Use Each Method

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| **WSJF vs. Value-Complexity Matrix**  WSJF is the preferred method when you have well-documented opportunities with quantified impact and estimated effort. The Value vs. Complexity Matrix is better suited for early-stage triage, stakeholder alignment workshops, or when comparing opportunities across different domains where direct quantitative comparison is difficult. |
| **Use Both Methods Together**  The most effective approach combines both methods. Start with the Value vs. Complexity Matrix in stakeholder workshops to build consensus on relative positioning, then apply WSJF scoring to the opportunities that land in the Quick Wins and Strategic Bets quadrants for more precise sequencing. |

## Plotting the Matrix

When facilitating the matrix exercise with stakeholders:

1. **Define the axes** — Agree on what "value" and "complexity" mean for this specific context. Value might be revenue impact, cost savings, or customer satisfaction improvement. Complexity might include technical difficulty, organizational change required, or time to implement.
2. **Place opportunities independently** — Have each stakeholder place opportunities on the matrix before revealing others' placements. This prevents anchoring bias where early placements influence later selections.
3. **Discuss divergence** — Where stakeholders disagree on placement, facilitate a discussion to surface different assumptions and reach consensus.
4. **Document rationale** — Record why each opportunity was placed on the matrix, , not just the quadrant where it landed.

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| **Presentation Impact**  The Value vs. Complexity Matrix is one of the most effective presentation tools in the toolkit. Executives can absorb the prioritization logic in seconds. Use color-coded dots for each opportunity, size them by estimated financial impact, and present the matrix as a single image that tells the entire prioritization story at a glance. |

**Module 3 Knowledge Check**

*Test your understanding of opportunity prioritization, WSJF scoring, and the Value vs. Complexity Matrix.*

**1. What does WSJF stand for?**

A) Weighted Scoring of Job Features

B) Weighted Shortest Job First

C) Work Sequence for Job Fulfillment

D) Weighted Strategy for Joint Feasibility

*Your answer: \_\_\_\_\_*

**2. In the Value vs. Complexity Matrix, opportunities in the 'High Value, Low Complexity' quadrant should be prioritized first.**

[ ] True [ ] False

**3. Which component is NOT part of the Cost of Delay calculation in WSJF?**

A) User/Business Value

B) Time Criticality

C) Risk Reduction / Opportunity Enablement

D) Team Velocity

*Your answer: \_\_\_\_\_*

**4. Match each quadrant of the Value vs. Complexity Matrix with the recommended action:**

*Match items from Column A to Column B:*

|  |  |
| --- | --- |
| High Value, Low Complexity | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| High Value, High Complexity | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Low Value, Low Complexity | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Low Value, High Complexity | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |

*Answer choices:* Prioritize immediately (Quick Win), Plan strategically with phased delivery, Consider if resources allow, Deprioritize or eliminate

**5. Which of the following should be included in an Opportunity Documentation template? (Select all that apply)** *(Select all that apply)*

[ ] A) Opportunity description and quantified impact

[ ] B) Supporting data and diagnostic evidence

[ ] C) Detailed technical implementation plan

[ ] D) Stakeholders affected and alignment status

**Answer Key**

**1. B**

*WSJF stands for Weighted Shortest Job First, a prioritization method that calculates the cost of delay divided by job duration to rank opportunities.*

**2. True**

*Correct. High Value, Low Complexity opportunities (often called 'Quick Wins') deliver the most impact with the least effort and should be prioritized to build momentum and demonstrate early value.*

**3. D**

*Cost of Delay in WSJF is calculated from User/Business Value + Time Criticality + Risk Reduction/Opportunity Enablement. Team Velocity is not a component of Cost of Delay.*

**4. High Value, Low Complexity → Prioritize immediately (Quick Win); High Value, High Complexity → Plan strategically with phased delivery; Low Value, Low Complexity → Consider if resources allow; Low Value, High Complexity → Deprioritize or eliminate**

*The matrix guides decision-making: Quick Wins first, Strategic projects with careful planning, Low Priority when resources permit, and avoid High Complexity / Low Value work.*

**5. A, B, D**

*Opportunity Documentation captures the what, why, and who — not the detailed how. Technical implementation plans come later during the tool development phase.*

# Module 4: AI Tool Development & Agile Delivery

*Design, prototype, and deliver AI-powered solutions using agile methodologies.*

**Duration:** 30 minutes

**Learning Objectives:**

* Understand the AI tool development lifecycle
* Apply design and prototyping techniques
* Choose between project-based and agile delivery approaches
* Leverage SAFe framework principles for enterprise delivery

# AI Tool Development

With opportunities prioritized and a roadmap in hand, the process moves from diagnosis to solution development. This chapter covers how to translate validated opportunities into AI-powered tools and solutions that deliver measurable operational improvement.

## From Opportunity to Solution

The transition from opportunity to solution requires a fundamental shift in thinking. During diagnosis, the practitioner asks "What is wrong and why?" During tool development, the question becomes "What AI-powered solution best addresses this validated gap?"

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| **AI First Design** |

## Selecting the Right Solution Type

The choice between agentic, assistive, and automation depends on three factors:

| Factor | Favors Agentic | Favors Assistive | Favors Automation | |--------|----------------|------------------|-------------------| | Decision complexity | Low-medium, well-defined rules | High, requires judgment | Low, deterministic | | Error tolerance | Errors are recoverable and low-cost | Errors are costly or visible | Errors are rare with clear rules | | Speed requirement | Real-time decisions needed | Human review time is acceptable | Batch processing is sufficient |

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| **Metro Cable Dispatch Example**  For Metro Cable, the dispatch optimization opportunity was designed as an assistive solution for the initial deployment — the AI recommends dispatch assignments, but coordinators review and approve them. This builds trust, generates training data for the AI model, and provides a transition path toward a fully agentic solution once accuracy thresholds are proven. |

# Design & Prototype

Prototyping in AI-Enabled Problem-Solving approach moves fast. AI tools enable practitioners to build functional prototypes in days rather than months, allowing stakeholders to interact with working solutions early and provide feedback that shapes the final product.

## 4 Prototyping Principles

1. **Start with the User** — Every prototype begins with a clear understanding of who will use it and what tasks they need to accomplish. Observe current workflows before designing new ones.
2. **Show, Don't Tell** — A working prototype communicates more effectively than any review of documented requirements. Build the simplest version that demonstrates the core value proposition.
3. **Fail Fast, Learn Faster** — Prototypes are designed to be disposable. Build them quickly, test them with real users, and iterate or pivot based on feedback. Getting attached to a prototype is the enemy of good design.
4. **Data In, Decision Out** — Every AI tool prototype should demonstrate the complete flow from data input to actionable output. Stakeholders need to see the end-to-end value, not just a technology demo.

## Epic and User Story Structure

Translate the opportunity and solution design into structured development artifacts:

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| **From Opportunity to Backlog** |
| **Verify with IT Early**  Before investing significant time in prototype development, confirm the technical feasibility with IT and security teamates. Confirm data access permissions, integration requirements, deployment infrastructure, and compliance constraints. A technically infeasible prototype wastes everyone's time and erodes stakeholder trust. |

## Prototype Testing

Test prototypes with real users performing real tasks. Observe where they struggle, what questions they ask, and what features they ignore. This qualitative feedback is as valuable as any quantitative metric.

# Projects vs. Agile Approaches

The choice between traditional project management and agile delivery significantly impacts the success of AI solution implementation. Understanding when to use each approach — and why AI-Enabled Problem-Solving generally favors agile — is essential for practitioners.

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| --- | --- |
| **Traditional Project Approach** | **Agile Approach** |
| Requirements are gathered upfront and frozen. A detailed project plan spans 6-12 months. Development proceeds through sequential phases (design, build, test, deploy). Changes require formal change requests and re-planning. Users see the solution only at final delivery. | Requirements are captured as a prioritized backlog and refined continuously. Work is delivered in 2-week sprints. Each sprint produces a working increment that users can test. Feedback directly shapes the next sprint. The solution evolves through rapid iteration toward product-market fit. |

## When to Use Each Approach

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| --- |
| **Default to Agile for AI** |

# SAFe Development Methods

The <GlossaryTerm term="SAFe">Scaled Agile Framework (SAFe)</GlossaryTerm> provides a structured approach to agile delivery at enterprise scale. For cross-functional teams, complex integrations, or large deployment, SAFe offers the coordination mechanisms needed to maintain agility without chaos.

## The 5-Step SAFe Process

<ProcessFlow steps={[ { title: "1. Define the Backlog", description: "Translate prioritized opportunities and user stories into a structured product backlog. Use WSJF scoring to sequence backlog items for maximum value delivery." }, { title: "2. Plan the Increment", description: "Conduct Program Increment (PI) Planning to align multiple teams on shared objectives, identify dependencies, and commit to delivery targets for the next 8-12 week increment." }, { title: "3. Execute Sprints", description: "Teams work in 2-week sprints, delivering working increments and conducting regular demos. Cross-team synchronization occurs through Scrum of Scrums and shared integration environments." }, { title: "4. Review and Adapt", description: "At the end of each Program Increment, conduct a system demo and Inspect & Adapt workshop. Assess what was delivered against plan, identify systemic impediments, and adjust the approach." }, { title: "5. Continuous Delivery", description: "Establish a continuous delivery pipeline that enables frequent, reliable releases to production. AI models are versioned and deployed through the same pipeline as application code." } ]} />

## The Product Owner Role

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| **Product Owner as Bridge**  The Product Owner is the critical link between the practitioner team and the development teams. They translate validated opportunities and prioritized requirements into actionable backlog items, make scope trade-off decisions within sprints, and ensure that what gets built aligns with what the diagnostic data recommends. The Product Owner should have deep familiarity with the diagnostic findings. |

## Key SAFe Artifacts for AI-Enabled Problem-Solving

| Artifact | Purpose | Connection | |----------|---------|-----------------| | Product Backlog | Prioritized list of features and capabilities | Directly derived from WSJF-scored opportunity roadmap | | Program Board | Visual dependency map across teams | Critical for AI solutions with data pipeline, model, and UI components | | PI Objectives | Measurable goals for each increment | Linked to the success measures defined in the Problem Statement | | Iteration Metrics | Sprint-level delivery and quality metrics | Used to track velocity and predict delivery timelines |

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| **Feedback Becomes Backlog**  In SAFe, user feedback from sprint demos and production usage is systematically captured and fed back into the product backlog. This creates a virtuous cycle where every deployment generates insights that improve the next iteration. For AI solutions, this feedback loop is essential — model performance in production often reveals optimization opportunities that were not visible during development. |

## SAFe Stages and Key Roles

The SAFe lifecycle flows through three stages, each with distinct roles and responsibilities:

### Stage 1: Assess & Plan

* **Organization Leaders** provide vision and direction based on diagnostic findings
* **Program Office** develops roadmaps using Economic View (ROI analysis) and Systems Thinking (big picture)
* **Architecture Review Board (ARB)** confirms system architecture is robust and approves plans before hand-over to build teams
* **Voice of Customer (VOC)** and **Voice of the Marketplace (VOM)** inform requirements and strategic direction

### Stage 2: Agile Design, Build, Test

* **Product Owners** drive adherence to the roadmap and manage the product backlog
* **Scrum Masters** manage build teams and remove roadblocks
* **Agile Build Teams** develop incremental features in sprint cycles

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| **Develop on Cadence, Deliver on Demand**  Teams work in consistent sprints but deploy when features are ready and business conditions are optimal. This decouples the development rhythm from the release schedule, enabling both predictability and flexibility. |

### Stage 3: Deploy & Adopt Users

* **Business Leaders** sign off on delivery requirements and confirm readiness
* **Release Management** coordinates deployment logistics and rollback plans
* **Change Management Team** ensures end users are prepared, trained, and supported
* Continuous feedback flows back to Stage 1, creating a virtuous improvement cycle

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| **Right-Size the Framework**  SAFe is designed for large-scale, multi-team efforts. For smaller efforts with a single development team, basic Scrum or Kanban may be more appropriate. Applying SAFe to a small team adds unnecessary overhead. Match the framework to the scale of the effort. |

**Module 4 Knowledge Check**

*Test your understanding of AI tool development, prototyping principles, agile delivery, and the SAFe framework.*

**1. Which prototyping principle states that a working prototype communicates more effectively than any requirements document?**

A) Start with the User

B) Show, Don't Tell

C) Fail Fast, Learn Faster

D) Data In, Decision Out

*Your answer: \_\_\_\_\_*

**2. In AI-Enabled Problem-Solving, you should complete a detailed requirements document before building any prototype.**

[ ] True [ ] False

**3. Rank the four prototyping principles in the order they are presented in the AI-Enabled Problem-Solving methodology:**

*Items to rank:*

• Start with the User

• Show, Don't Tell

• Fail Fast, Learn Faster

• Data In, Decision Out

*Your ranking:*

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. What is the correct User Story format used in agile tool development?**

A) Given [context], When [action], Then [result]

B) As a [role], I want [capability] so that [benefit]

C) In order to [goal], as a [role], I need [feature]

D) When [trigger], the system shall [behavior]

*Your answer: \_\_\_\_\_*

**5.** Before investing significant time in prototype development, confirm technical **\_\_\_\_\_\_\_\_\_** with IT and **\_\_\_\_\_\_\_\_\_** teamatess.

**6. Which of the following should you validate with IT before building an AI prototype? (Select all that apply)** *(Select all that apply)*

[ ] A) Data access permissions

[ ] B) User interface color scheme

[ ] C) Integration requirements

[ ] D) Compliance constraints

**Answer Key**

**1. B**

*'Show, Don't Tell' emphasizes building the simplest working version that demonstrates the core value proposition, rather than relying on documentation to convey the concept.*

**2. False**

*False. AI-Enabled Problem-Solving approach emphasizes rapid prototyping where AI tools enable practitioners to build functional prototypes in days rather than months, prioritizing working software over comprehensive documentation.*

**3. 1. Start with the User; 2. Show, Don't Tell; 3. Fail Fast, Learn Faster; 4. Data In, Decision Out**

*The four principles follow a logical progression: understand the user first, demonstrate with a working prototype, iterate quickly based on feedback, and ensure the complete data-to-decision flow works.*

**4. B**

*Agile tool development uses the standard user story format: 'As a [role], I want [capability] so that [benefit]' — keeping the focus on user needs and value delivery.*

**5. "feasibility", "security"**

*Validating technical feasibility and security requirements early prevents wasted effort on prototypes that cannot be deployed due to technical or compliance constraints.*

**6. A, C, D**

*Before prototyping, validate data access permissions, integration requirements, deployment infrastructure, and compliance constraints with IT. UI aesthetics are design decisions, not IT validation items.*

# Module 5: Performance Management & Sustainment

*Sustain improvements through structured governance, support systems, and feedback loops.*

**Duration:** 30 minutes

**Learning Objectives:**

* Implement the three-pillar sustainment framework
* Design organizational structure for sustained improvement
* Build continuous learning and support systems
* Establish performance feedback loops and scorecards

# Sustainment Framework

Deploying an AI solution is only the beginning. Without a deliberate sustainment framework, even the most effective solutions will degrade over time as processes drift, knowledge fades, and organizational attention shifts to the next priority. Sustainment ensures that improvements deliver lasting value.

## The Three Pillars

The sustainment framework is built on three interconnected pillars:



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| **All Three Pillars Are Required**  Structure without Support means people have clear roles but lack the knowledge to perform them. Support without Feedback means people are trained but have no way to know if their performance is meeting standards. Feedback without Structure means data is collected but no one is accountable for acting on it. All three pillars must be present and reinforcing for sustainment to succeed. |

## The Drift Problem

<GlossaryTerm term="Drift">Drift</GlossaryTerm> is the gradual degradation of solution effectiveness over time. It occurs when:

* **Process drift** — Users develop workarounds that bypass the intended workflow
* **Model drift** — AI model accuracy declines as underlying data patterns change
* **Priority drift** — Organizational attention shifts and sustainment activities are deprioritized
* **Knowledge drift** — Staff turnover dilutes institutional knowledge about how and why the solution works

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| **Drift Is Invisible Until It Compounds**  Drift rarely announces itself. A 1% weekly decline in process adherence compounds to a 40% decline over a year. By the time the degradation becomes visible in operational metrics, significant remediation effort is required. The sustainment framework's primary purpose is to detect and correct drift before it compounds. |

## Sustainment Is Not Maintenance

Maintenance is reactive — fixing things when they break. Sustainment is proactive — continuously monitoring, adjusting, and improving to prevent degradation. The sustainment framework assumes that the operational environment is dynamic and that solutions must evolve continuously to remain effective.

# Structure (Alignment)

The Structure pillar ensures that the organization is aligned to sustain the AI solution through clear roles, responsibilities, accountability mechanisms, and incentive structures. Without structural alignment, even well-trained teams will revert to old behaviors under operational pressure.

## Key Questions for Structural Alignment

Before considering the solution fully deployed, answer these questions:

* **Who owns this solution?** Identify a single accountable owner (not a committee) who is responsible for ongoing performance and evolution.
* **Who operates it daily?** Define the specific roles that interact with the solution as part of their daily workflow.
* **Who monitors performance?** Assign responsibility for reviewing metrics, identifying trends, and escalating issues.
* **Who decides on changes?** Establish the decision-making authority for solution modifications, updates, and enhancements.
* **Who funds ongoing costs?** Confirm the budget allocation for hosting, maintenance, support, and future development.
* **What happens when the owner leaves?** Define the succession plan and knowledge transfer process for key roles.

## Incentive Alignment

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| **Start Lean, Scale as Needed** |

# Support (Learning)

The Support pillar ensures that everyone who interacts with the AI solution has the knowledge, skills, and resources to use it effectively. Support is not a one-time training event — it is a continuous learning system that evolves alongside the solution.

## 5 Support Components

A comprehensive support system includes:

1. **Initial Training** — Structured onboarding for all users covering the solution's purpose, core workflows, and expected behaviors. Include hands-on practice with real (or realistic) scenarios.
2. **Reference Documentation** — Accessible, up-to-date documentation including quick-start guides, workflow diagrams, FAQ sections, and troubleshooting procedures. Documentation should be searchable and versioned.
3. **Ongoing Learning** — Regular refresher sessions, advanced training for power users, and update briefings when the solution evolves. Use microlearning formats (5-10 minute modules) for continuous skill building.
4. **Help Desk and Escalation** — A clear path for users to get help when they encounter issues. Define first-line support (team leads), second-line support (solution analysts), and third-line support (technical teams) with response time expectations.
5. **Knowledge Community** — A forum or channel where users can share tips, ask questions, and learn from each other's experiences. Peer learning is often more effective than formal training for practical problem-solving.

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| **AI-Powered Support**  Use AI to enhance the support system itself. An AI-powered help assistant can answer common user questions instantly, provide contextual guidance within the solution interface, and escalate complex issues to human support with full context. This reduces the support burden on the team while improving user experience. |
| **Training Is Not a One-Time Event**  The most common sustainment failure is treating training as a checkbox completed at launch. Staff turnover means new users join continuously. Solution updates change workflows. Operational context evolves. Training must be an ongoing program with regular refreshers, updated materials, and mechanisms to assess competency over time. |

## Measuring Support Effectiveness

Track these indicators to assess whether the support system is working:

| Indicator | Target | Red Flag | |-----------|--------|----------| | Help desk ticket volume | Declining over time | Sustained or increasing volume after initial ramp-down | | Time to resolve user issues | Decreasing as knowledge builds | Persistent long resolution times indicate knowledge gaps | | Feature adoption rate | Increasing as users gain confidence | Stagnant adoption suggests training or UX issues | | User satisfaction scores | Stable or improving | Declining satisfaction may signal unmet support needs | | Self-service resolution rate | Increasing over time | Low self-service suggests documentation gaps |

# Feedback (Performance)

The Feedback pillar establishes systematic monitoring, measurement, and response mechanisms that detect performance changes and drive continuous improvement. A well-designed <GlossaryTerm term="Feedback Loop">Feedback Loop</GlossaryTerm> transforms raw operational data into actionable intelligence.

## Feedback Loop: 4 Elements

Every effective feedback loop contains four elements:

1. **Measure** — Collect quantitative data on solution performance, user behavior, and operational outcomes at regular intervals. Automate data collection wherever possible to ensure consistency.
2. **Analyze** — Compare measurements against targets, baselines, and trends. Look for both positive signals (opportunities to expand) and negative signals (early indicators of drift).
3. **Decide** — Based on analysis, determine what action is needed. Options include: no action (performance on track), minor adjustment (parameter tuning, process refinement), major intervention (redesign, retraining), or escalation (systemic issue requiring leadership attention).
4. **Act** — Execute the decided action, document what was changed and why, and monitor the impact in the next measurement cycle. Close the loop by confirming the action achieved the intended effect.

## Monitoring Cadence

Different metrics require different monitoring frequencies:

| Cadence | Metrics | Responsible | Action Threshold | |---------|---------|-------------|-----------------| | **Daily** | System uptime, AI model response time, critical error count | Operations team / automated alerts | Any critical system failure triggers immediate response | | **Weekly** | User adoption rate, override frequency, help desk volume | Solution analyst | >10% deviation from baseline triggers investigation | | **Monthly** | Business KPIs (FCR, cost per dispatch, customer satisfaction), model accuracy metrics | Solution owner + leadership | >5% decline from target triggers formal review | | **Quarterly** | Strategic alignment review, ROI assessment, roadmap update | Executive sponsor + solution owner | Misalignment with strategic objectives triggers re-prioritization |

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| **Balance Your Cadence**  Monitoring too frequently creates noise and alert fatigue. Monitoring too infrequently allows problems to compound undetected. Match the monitoring cadence to the speed at which the metric can change and the cost of delayed detection. Daily monitoring for a metric that moves quarterly wastes attention; quarterly monitoring for a metric that can collapse daily is dangerous. |

## Agile Governance for Feedback

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| **Lightweight, Responsive Governance**  Feedback governance should follow agile principles: short review cycles, data-driven decisions, and minimal bureaucracy. A monthly 30-minute performance review with the solution owner, key users, and technical lead is more effective than a quarterly 3-hour steering committee. The goal is to detect and respond to changes quickly, not to produce comprehensive reports that no one reads. |

## Continuous Improvement Cycle

The feedback pillar does not just maintain current performance — it drives improvement. Each monitoring cycle should ask not only "Are we meeting the target?" but also "Can we raise the target?" As the solution matures and the team gains experience, performance standards should ratchet upward to capture the full potential of the AI investment.

**Module 5 Knowledge Check**

*Test your understanding of the sustainment framework, structural alignment, support systems, and feedback loops.*

**1. What are the three pillars of the Sustainment Framework?**

A) Plan, Execute, Monitor

B) Structure, Support, Feedback

C) People, Process, Technology

D) Design, Build, Deploy

*Your answer: \_\_\_\_\_*

**2. A 1% weekly decline in a metric is insignificant and does not require attention.**

[ ] True [ ] False

**3. What is the MOST important characteristic of solution ownership in the sustainment phase?**

A) Ownership should be shared across a committee for broad accountability

B) A single named individual must be the accountable owner

C) The original project team should retain ownership indefinitely

D) Ownership should rotate monthly to spread the workload

*Your answer: \_\_\_\_\_*

**4. Match each monitoring cadence with the appropriate focus area:**

*Match items from Column A to Column B:*

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| Daily | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Weekly | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Monthly | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Quarterly | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |

*Answer choices:* System uptime, AI response time, critical errors, Adoption rate, override frequency, help desk volume, Business KPIs (FCR, CSAT), model accuracy trends, Strategic alignment, ROI, roadmap updates

**5. Which of the following are types of drift that threaten sustained improvements? (Select all that apply)** *(Select all that apply)*

[ ] A) Process drift (user workarounds)

[ ] B) Model drift (AI accuracy declines)

[ ] C) Budget drift (costs increase)

[ ] D) Priority drift (organizational attention shifts)

[ ] E) Knowledge drift (staff turnover dilutes expertise)

**6.** Scorecards differ from standard dashboards because they include **\_\_\_\_\_\_\_\_\_** — specific metric values that require specific **\_\_\_\_\_\_\_\_\_**.

**Answer Key**

**1. B**

*The three pillars are Structure (alignment of roles, responsibilities, and incentives), Support (continuous learning and collaboration), and Feedback (goal setting, scorecards, and performance monitoring). All three must be present and reinforcing.*

**2. False**

*False. A 1% weekly decline compounds to approximately 40% annual decline. Drift is dangerous precisely because it is gradual and invisible until it compounds. This is why regular monitoring cadences with decision triggers are essential.*

**3. B**

*A single accountable owner — not a committee — must be responsible for ongoing performance and evolution. Without clear individual ownership, nobody is responsible for monitoring performance, responding to issues, or evolving the solution.*

**4. Daily → System uptime, AI response time, critical errors; Weekly → Adoption rate, override frequency, help desk volume; Monthly → Business KPIs (FCR, CSAT), model accuracy trends; Quarterly → Strategic alignment, ROI, roadmap updates**

*Each monitoring cadence serves a different purpose: daily catches critical failures, weekly tracks operational adoption, monthly evaluates business impact, and quarterly ensures strategic alignment.*

**5. A, B, D, E**

*The four types of drift identified in the sustainment framework are: process drift, model drift, priority drift, and knowledge drift. While budget changes can be a concern, 'budget drift' is not one of the defined drift categories in the AI-Enabled Problem-Solving framework.*

**6. "decision triggers", "responses"**

*Without decision triggers, scorecards become passive information displays that people review and ignore. Decision triggers connect observations to the product backlog and drive sprint-level improvements.*

# Module 6: Organizational Change Management

*Enable organizational readiness and drive adoption through structured change management practices.*

**Duration:** 35 minutes

**Learning Objectives:**

* Assess change readiness across key dimensions
* Design and execute readiness surveys
* Develop targeted communications plans
* Implement governance frameworks for sustained change

# Change Readiness Baseline

Before launching any organizational change initiative, practitioners must establish a <GlossaryTerm term="Readiness Baseline">Readiness Baseline</GlossaryTerm> — a structured assessment of the organization's current capacity to absorb and sustain the proposed changes. The baseline does not determine whether change should happen; it determines how the change approach should be designed.

## Three Dimensions of Readiness

<ProcessFlow steps={[ { title: "North Star Vision", description: "Does the organization have a clear, compelling vision for the future state? Is leadership aligned on the direction? Can the vision be articulated simply enough that frontline workers understand their role in achieving it?" }, { title: "Performance Management", description: "Are the existing performance management systems capable of measuring the new behaviors and outcomes required? Can metrics be adapted to reward adoption and surface resistance? Is there a baseline of current performance to measure against?" }, { title: "Resource Availability", description: "Does the organization have the budget, people, technology, and time to implement the change alongside ongoing operations? Are key resources already committed to competing priorities?" } ]} />

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| **Not Pass/Fail**  The Readiness Baseline is a diagnostic tool, not a gate. A low readiness score does not mean the change should be abandoned — it means the change approach must be designed to address specific readiness gaps. An organization with weak performance management systems needs a change plan that includes building those systems. An organization with strong vision alignment but limited resources needs a phased approach that manages workload. |

## Assessing Each Dimension

For each dimension, evaluate on a 5-point scale:

| Score | Level | Description | |-------|-------|-------------| | 1 | Not Present | No evidence of this capability; must be built from scratch | | 2 | Emerging | Early-stage efforts exist but are inconsistent and informal | | 3 | Developing | Structured approaches exist but are not yet fully embedded | | 4 | Established | Robust, consistent capability that is well-understood across the organization | | 5 | Optimized | Best-in-class capability that is continuously improved and leveraged strategically |

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| **Resource Reality Check**  Resource availability is the most commonly overestimated dimension. Organizations routinely commit to initiatives without honestly assessing whether their people have the capacity to take on additional work. Be rigorous in this assessment — survey actual team workloads, not what managers think the workload should be. |

## Using the Baseline

The baseline directly informs the change management plan. Dimensions scoring 1-2 require dedicated workstreams in the change plan. Dimensions scoring 3-4 require monitoring and reinforcement. Dimensions scoring 5 can be leveraged as strengths to accelerate other aspects of the change.

# Readiness Assessment

The <GlossaryTerm term="Readiness Assessment">Readiness Assessment</GlossaryTerm> builds on the baseline by evaluating three additional dimensions that determine how the organization will respond to the specific changes being proposed. While the baseline measures general change capacity, the assessment evaluates readiness.

## Dimension 1: Case for Change

The <GlossaryTerm term="Case for Change">Case for Change</GlossaryTerm> answers the fundamental question: "Why must we change, and why now?" A compelling case for change requires:

* **Data-driven urgency** — Quantified evidence of the current-state gap (directly from AI-Enabled Problem-Solving diagnostic findings)
* **Stakeholder relevance** — Clear articulation of what the change means for each stakeholder group personally
* **Consequence of inaction** — A credible description of what happens if the organization does not change
* **Vision of success** — A tangible picture of what the improved future state looks and feels like

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| **Grounded in Diagnostic Findings**  The AI-Enabled Problem-Solving Case for Change is uniquely powerful because it is built on validated, quantified diagnostic findings rather than assumptions. When you can say "our FCR is 62% versus a top-quartile benchmark of 85%, costing $2.4M annually in excess truck rolls," the urgency is self-evident. |

## Dimension 2: Influence Network

The <GlossaryTerm term="Influence Network">Influence Network</GlossaryTerm> maps the informal power structures that will accelerate or impede adoption. Three types of influencers matter:

1. **Champions** — Enthusiastic supporters who actively promote the change to their peers. They provide social proof that the change is worthwhile.
2. **Skeptics** — Thoughtful critics who raise legitimate concerns. Engaging skeptics early strengthens the change plan and converts potential resistors into informed advocates.
3. **Connectors** — People with broad social networks who amplify messages — positive or negative — across the organization. They may not have strong opinions about the change but their influence is disproportionate.

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| **Identify the Top 5 Informal Leaders**  In every organization, a small number of individuals have disproportionate informal influence. They are not necessarily managers — they may be senior technicians, veteran coordinators, or respected team leads. Identify the top 5 informal leaders in the affected population, engage them early, and invest time in earning their support. Their endorsement is worth more than any formal communication campaign. |

<ReflectionPrompt question="Who are the top 3 informal leaders in your team or department? Are they likely to be Champions, Skeptics, or Connectors for an AI-driven change initiative?" answer="Identifying informal leaders is critical because their endorsement or resistance carries more weight than formal communications. Champions actively promote change, Skeptics raise legitimate concerns that strengthen your plan, and Connectors amplify messages (positive or negative) across the organization. Engaging all three types early is essential." />

## Dimension 3: Communications

Assess the organization's communication infrastructure and culture. Can messages reach all affected stakeholders reliably? Are existing channels trusted? Is there a history of transparent communication, or has past communication been perceived as corporate spin?

# Readiness Survey Design

A well-designed readiness survey quantifies the qualitative dimensions identified in the baseline and assessment. It provides measurable data that can be tracked over time and compared across organizational units. Survey design requires careful attention to question construction, administration, and analysis.

## 5 Design Principles

1. **Keep it short** — Target 15-20 questions maximum. Survey fatigue degrades response quality. Every question should map to a specific readiness dimension and inform a specific decision.
2. **Use consistent scales** — Apply the same response scale (e.g., 5-point Likert from Strongly Disagree to Strongly Agree) across all questions. This enables cross-question comparison and index construction.
3. **Balance quantitative and qualitative** — Include 2-3 open-ended questions alongside scaled items. Open-ended responses often reveal issues that structured questions miss.
4. **Segment by audience** — Design the survey so that results can be analyzed by department, role, tenure, and location. Aggregate scores can mask significant variation across groups.
5. **Establish a baseline** — Administer the survey before the change begins, then repeat at regular intervals (typically every 60-90 days) to track readiness trajectory over time.

## Sample Question Categories

| Category | Example Question | Readiness Dimension | |----------|-----------------|-------------------| | Awareness | "I understand why our organization is implementing this change" | Case for Change | | Capability | "I feel confident that I have the skills needed to work with the new system" | Support/Learning | | Willingness | "I believe this change will improve how I do my work" | Influence/Adoption | | Leadership | "My direct manager actively supports and communicates about this change" | Structure/Alignment |

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| **AI-Assisted Analysis**  Use AI to analyze open-ended survey responses at scale. AI can categorize themes, identify sentiment patterns, and surface specific concerns that would take hours to extract manually. This transforms qualitative survey data from anecdotal evidence into structured, actionable intelligence. |
| **Guarantee Anonymity**  Readiness surveys are only valuable if respondents answer honestly. Guarantee anonymity in both the survey design (no identifying information required) and the reporting (results reported only at the group level, never individual). If employees fear their responses will be attributed to them, the survey will measure what people think leadership wants to hear, not what they actually believe. |

## Acting on Survey Results

Survey results should drive specific actions, not just reports. For each readiness dimension that scores below the target threshold, define a specific intervention: additional communication, targeted training, leadership engagement, or resource reallocation. Track whether interventions improve scores in subsequent survey waves.

# Communications Management

Effective communications management ensures that the right people receive the right information at the right time through the right channels. Poor communication is the single most cited reason for change resistance, and it is entirely preventable with deliberate planning.

## The 5W Planning Framework

Structure every communication using the 5W framework:

* **Who** — Which stakeholder group is this communication for? Different groups need different messages.
* **What** — What specific information does this group need at this point in the change journey?
* **When** — What is the optimal timing? Too early creates anxiety; too late creates distrust.
* **Where** — Which channel will be most effective for this audience? Email, town hall, team meeting, digital signage, intranet?
* **Why** — What action or understanding should this communication produce? Every communication should have a measurable objective.

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| **Different Stakeholders Need Different Messages** |
| **Two-Way Communication**  The most effective change communication is two-way. Create mechanisms for employees to ask questions, share concerns, and provide feedback — and visibly respond to what they share. Town halls with live Q&A, anonymous question boxes, dedicated Slack channels, and manager-led team discussions all create two-way channels. When people feel heard, resistance decreases even when their concerns cannot be fully addressed. |

## Measuring Communication Effectiveness

Track whether communications are reaching their audience and achieving their objectives:

| Metric | Method | Target | |--------|--------|--------| | Reach | Open rates, attendance counts | >80% of target audience | | Comprehension | Pulse survey questions | >70% can articulate the change rationale | | Sentiment | Feedback channel analysis | Net positive or improving trend | | Action | Behavior change indicators | Aligned with change adoption milestones |

# Governance Framework

Governance provides decision-making structures and accountability mechanisms that keep the organization on track. A well-designed governance framework balances oversight with agility, ensuring that decisions are made quickly by the right people with the right information.

## 4 Governance Components



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| **Governance Is Not Bureaucracy**  Governance should enable speed, not impede it. If governance meetings become status updates without decisions, if approval processes create bottlenecks that delay execution by weeks, or if governance artifacts become ends in themselves rather than tools for clarity — the framework needs to be simplified. Every governance activity should answer the question: "Does this help us make better decisions faster?" |

## Meeting Cadence

| Body | Frequency | Duration | Key Agenda Items | |------|-----------|----------|-----------------| | Steering Committee | Monthly | 60 min | Strategic alignment review, barrier removal, major decision approval | | Working Group | Weekly | 45 min | Execution status, issue resolution, cross-workstream coordination | | Change Champions | Bi-weekly | 30 min | Feedback summary, adoption insights, upcoming communications preview | | Feedback Council | Bi-weekly | 45 min | User experience feedback, training gaps, solution improvement suggestions |

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| **Governance Evolution**  The governance framework should evolve as organization progresses. Early stages require more frequent Steering Committee engagement and heavier Working Group coordination. As the change stabilizes, governance can shift toward lighter-touch monitoring with the Feedback Council and Change Champions playing a larger role. Plan for governance to scale down, not just up. |
| **Avoid Single Points of Failure**  If the entire governance framework depends on one person (typically the program manager or change lead), it is fragile. Ensure that at least two people can chair each governance body, that meeting notes and decisions are documented in a shared location, and that the governance framework survives personnel changes without disruption. |

## Governance Decision Rights

Document explicit decision rights for each governance body. Clarify which decisions each body can make autonomously, which require escalation, and what the escalation path looks like. This prevents both decision paralysis (everyone waiting for someone else to decide) and rogue decisions (individuals acting without appropriate authority).

**Module 6 Knowledge Check**

*Test your understanding of change readiness, influence networks, communications management, and governance frameworks.*

**1. What are the three dimensions of the Change Readiness Baseline?**

A) Budget, Timeline, Resources

B) North Star Vision, Performance Management, Resource Availability

C) Leadership, Culture, Technology

D) Strategy, Execution, Communication

*Your answer: \_\_\_\_\_*

**2. A low readiness score means the organization should not proceed with the change initiative.**

[ ] True [ ] False

**3. Match each influencer type with their role in change adoption:**

*Match items from Column A to Column B:*

|  |  |
| --- | --- |
| Champions | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Skeptics | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Connectors | → \_\_\_\_\_\_\_\_\_\_\_\_\_ |

*Answer choices:* Enthusiastic supporters who provide social proof and energy, Thoughtful critics whose concerns strengthen the plan, Broad networks that amplify messages — positive or negative

**4. Rank the four phases of the communication cadence in the correct order:**

*Items to rank:*

• Awareness (Why and what — case for change)

• Understanding (Detailed what, when, and who)

• Engagement (Go-live details and real-time support)

• Reinforcement (Performance data and recognition)

*Your ranking:*

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**5. Which of the following are components of the Governance Framework? (Select all that apply)** *(Select all that apply)*

[ ] A) Steering Committee

[ ] B) Working Group

[ ] C) Change Champions

[ ] D) External Auditors

[ ] E) Feedback Council

**6.** Readiness surveys should be limited to **\_\_\_\_\_\_\_\_\_** questions and must guarantee **\_\_\_\_\_\_\_\_\_** to get honest responses.

**Answer Key**

**1. B**

*The Readiness Baseline assesses three dimensions: North Star Vision (strategic clarity), Performance Management (KPI alignment), and Resource Availability (people, budget, technology, time).*

**2. False**

*False. The Readiness Baseline is diagnostic, NOT pass/fail. A low score indicates where the change management approach must dedicate additional effort — it does not mean change should be abandoned.*

**3. Champions → Enthusiastic supporters who provide social proof and energy; Skeptics → Thoughtful critics whose concerns strengthen the plan; Connectors → Broad networks that amplify messages — positive or negative**

*The Influence Network includes three types: Champions build momentum, Skeptics surface risks that improve the plan, and Connectors spread information rapidly through their networks.*

**4. 1. Awareness (Why and what — case for change); 2. Understanding (Detailed what, when, and who); 3. Engagement (Go-live details and real-time support); 4. Reinforcement (Performance data and recognition)**

*Communications follow a four-phase cadence: Awareness (4-6 weeks pre-launch), Understanding (2-4 weeks pre-launch), Engagement (launch + 2 weeks), and Reinforcement (ongoing, tapering from weekly to monthly).*

**5. A, B, C, E**

*The four governance bodies are: Steering Committee (executive-level strategic direction), Working Group (cross-functional operational execution), Change Champions (embedded peer advocates), and Feedback Council (representative end users providing structured input).*

**6. "15-20", "anonymity"**

*Surveys should be kept short (15-20 questions max) and anonymous. Without anonymity, employees report what they think leadership wants to hear rather than their actual experience.*

# Module 7: Playbook Summary & Next Steps

*Review key takeaways from every section of the Playbook and prepare to apply the methodology.*

**Duration:** 10 minutes

**Learning Objectives:**

* Recall the core principles and activities of the AI-Enabled Problem-Solving framework
* Summarize key takeaways from each playbook section
* Understand how AI-Enabled Problem-Solving embeds continuous improvement into operations

# Playbook Summary

The Playbook provides a comprehensive framework for practitioners to leverage AI capabilities for effective problem-solving, harnessing AI for meaningful, sustainable change. This summary captures the key takeaways from each section — use it as a quick reference and a checklist for your own efforts.

* **Comprehensive Journey:** The Playbook’s three main sections guide users through the entire lifecycle of a project. This journey begins with an initial problem diagnosis and moves systematically through to the final solution development.
* **Foundational Principles:** All strategic decisions within the framework are anchored by two core pillars: Data First and AI First. These principles ensure that every step of the process is grounded in empirical evidence and enhanced by intelligent automation.
* **Universal Application:** The Playbook utilizes tool-agnostic frameworks that focus on high-level methodologies rather than specific software. This flexible design allows it to be applied to an unlimited number of use cases across any industry or professional context.

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| --- |
| **Final Thought** |

# Glossary

*43 terms used throughout this playbook.*

| **Term** | **Definition** | **First Introduced** |
| --- | --- | --- |
| **Agentic Tool** | An AI system that performs tasks autonomously within defined parameters, planning steps, executing actions, and adapting based on results without requiring human direction at each stage. | AI Tool Development |
| **Agile Governance** | Post-implementation management where the solution evolves continuously through sprint cycles based on user feedback. Assumes initial implementation is Version 1. | Feedback (Performance) |
| **AI First** | The principle of designing solutions that take full advantage of AI capabilities to achieve quantum gains in efficiency. Ask 'what becomes possible if AI handles this?' rather than 'how can AI speed up step 3?' | Introducing AI-Enabled Problem-Solving |
| **AI-Enabled Problem-Solving** | An iterative approach for diagnosing problems, prioritizing solutions, and sustaining improvements using AI and agile governance. Rests on two foundational principles: Data First and AI First. | Introducing AI-Enabled Problem-Solving |
| **Baseline** | The pre-implementation measurement used as a reference point. Must be specific, measured, and documented before any solution is implemented. | 08-analysis-validation |
| **Benchmark** | An external or industry-standard reference point used to assess whether a gap is significant. Answers the question 'compared to what?' | 09-ai-enabled-research |
| **Business Value** | A 1-10 rating of business value an option delivers. Scored by the cross-functional team. Common error: confusing effort required with value delivered. | WSJF Scoring Method |
| **Case for Change** | The articulated answer to 'why are we doing this?' that must resonate at every level. Must name specific harm of current state and concrete benefit of proposed change. | Readiness Assessment |
| **Confirmation Bias** | Tendency to interpret evidence as confirmation of existing beliefs. Particularly dangerous during validation interviews. Defense: open-ended questions, treat contradictions as signal. | 08-analysis-validation |
| **Context + Task + Output** | The prompt structure used throughout AI interactions. Context provides validated findings, Task specifies what AI should produce, Output defines the format. | Curiosity-Enabled Analysis |
| **Data First** | The principle of ingesting and interrogating comprehensive data before proposing solutions. Instead of starting with stakeholder impressions, start with data patterns and validate them against stakeholder experience. | Introducing AI-Enabled Problem-Solving |
| **Diagnostic Interviews** | Early Phase 1 interviews asking 'What is broken? What frustrates you?' to generate qualitative data that combines with quantitative data to validate gaps. | 08-analysis-validation |
| **Drift** | Gradual, unintended regression of a metric toward its pre-implementation baseline. Dangerous because it is gradual and compounds over time. | Sustainment Framework |
| **Epic** | A high-level capability encompassing multiple user stories. Epics correspond to major solution components that can be estimated, prioritized, and implemented independently. | Design & Prototype |
| **Feedback Loop** | Structured mechanism where field observations reach someone who can act within a defined timeframe. Has a source, cadence, owner, and connection to sprint backlog. | Feedback (Performance) |
| **Hallucination** | When an AI model generates factually wrong but structurally plausible text. LLMs produce statistically likely text, not verified facts. AI-Enabled Problem-Solving treats all AI-generated figures as unverified until checked. | 08-analysis-validation |
| **Hypothesis Testing** | Scientific method applied to operational problems using Null Hypothesis (H0: no effect) and Alternative Hypothesis (Ha: no effect cannot be proven). Rejecting H0 means the factor warrants investigation, not that causation is proven. | Issues Tree & Hypotheses |
| **Influence Network** | Map of who actually shapes opinion and drives adoption, which rarely matches the org chart. Includes formal leaders, informal leaders, and resistors. | Readiness Assessment |
| **Issues Tree** | A structured MECE decomposition tool that breaks a problem into logical component parts. Depicted horizontally with trunk (main problem), branches, sub-branches, and twigs. | Issues Tree & Hypotheses |
| **Job Size** | A 1-10 rating of implementation duration and complexity. The divisor in WSJF, so high-effort options need proportionally higher value to justify ranking. | WSJF Scoring Method |
| **MECE** | Mutually Exclusive, Collectively Exhaustive. A structuring principle for issues trees ensuring that categories don't overlap and together cover all possibilities. | Issues Tree & Hypotheses |
| **Monitoring Cadence** | How often metrics are checked: daily (zone-level), weekly (feedback analysis), monthly (trends), quarterly (solution health). Too frequent creates alert fatigue; too infrequent allows drift. | Feedback (Performance) |
| **Option Set** | The 2-4 solution options developed in Phase 1 for Phase 2 scoring. Must contain genuine trade-offs between speed, impact, risk, and cost. | 11-opportunity-synthesis |
| **Problem Statement** | Structured format defining the problem being solved. Contains seven components: Description, Customers, Decision Makers, Decision Drivers, Boundaries, Success Measures, and Timeframe. | Problem Statement |
| **Product Backlog** | The ordered list of all work items for a solution, maintained by the Product Owner. Grows from tech feedback, metric signals, and stakeholder observations. | SAFe Development Methods |
| **Product Owner** | Person who owns the product backlog and prioritization decisions. Reviews AI feedback analysis weekly and creates backlog items for sprint planning. | SAFe Development Methods |
| **Quick Win** | A low-risk, low-investment option implementable in weeks. Required in every option set. Trades magnitude for certainty. | 11-opportunity-synthesis |
| **Readiness Assessment** | Evaluation of organizational capacity to absorb change across: Case for Change, Influence Network, and Communications. | Readiness Assessment |
| **Readiness Baseline** | Initial assessment across three dimensions: North Star Vision, Performance Management alignment, and Resource availability. | Change Readiness Baseline |
| **Risk Reduction & Opportunity Enablement** | A 1-10 rating of organizational risk mitigated or future capabilities unlocked by implementing the option. | WSJF Scoring Method |
| **Root Cause vs. Symptom** | A root cause is the mechanism producing the observed problem. A symptom is the problem itself. Phase 1 requires root causes, not symptoms. | 08-analysis-validation |
| **SAFe** | Scaled Agile Framework. Provides structured approach to agile development at enterprise scale. AI-Enabled Problem-Solving leverages SAFe principles for continuous value delivery. | SAFe Development Methods |
| **Sensitivity Analysis** | Asking AI to generate scenarios when assumptions change. Best/likely/worst case. The scenarios are useful framing; specific numbers require independent verification. | 09-ai-enabled-research |
| **Sequential Prompting** | Breaking a complex ask into multiple turns rather than one prompt. Each turn lets the practitioner check output before it becomes input for the next step. | 10-data-analysis-plan |
| **Sprint** | A fixed-duration work cycle, typically two weeks. During Phase 3, feedback becomes backlog items prioritized and committed to sprints. | SAFe Development Methods |
| **Sustainment Framework** | Three-pillar model: Structure (reporting lines, incentives), Support (continuous learning, collaboration), Feedback (goal setting, performance scorecards). All three must be present. | Sustainment Framework |
| **T-Shirt Sizing** | Rough effort estimation using S/M/L/XL. S=days, M=weeks, L=1-3 months, XL=3+ months. False precision is worse than acknowledged imprecision at Phase 1 stage. | WSJF Scoring Method |
| **Time Criticality** | A 1-10 rating of urgency. Higher scores indicate regulatory deadlines, competitive pressure, or customer attrition risk. | WSJF Scoring Method |
| **Transformational Option** | A high-impact, high-investment option requiring months. Carries the most fragile assumptions. Verify with IT and procurement before presenting. | 11-opportunity-synthesis |
| **User Story** | A specific need from a user perspective: 'As a [role], I want [capability] so that [benefit].' Describes user experience, not system architecture. | Design & Prototype |
| **Validated Gap** | The measured difference between current performance and a benchmark, confirmed by both quantitative data and qualitative interviews. A gap in data but not interviews (or vice versa) is a hypothesis, not validated. | 08-analysis-validation |
| **Validation Interviews** | Post-solution interviews testing whether proposed solutions address described problems. Different from diagnostic interviews. If interviews contradict the solution, the solution is wrong. | 08-analysis-validation |
| **WSJF** | Weighted Shortest Job First. Phase 2 scoring method: Cost of Delay / Job Size = WSJF Score. Cost of Delay = Business Value + Time Criticality + Risk Reduction & Opportunity Enablement. | WSJF Scoring Method |