Structured Decision-Making & Problem-Solving Models Reference List

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1. Rational Decision-Making Model

- **Steps**:
    1. Define the problem.
    2. Identify decision criteria.
    3. Weigh the criteria.
    4. Generate alternatives.
    5. Evaluate alternatives.
    6. Choose the best alternative.
    7. Implement the decision.
    8. Evaluate the decision's effectiveness.
- **Best For**: Complex, high-stakes decisions requiring logical analysis.

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2. SWOT Analysis

- **Components**:
    - Strengths
    - Weaknesses
    - Opportunities
    - Threats
- **Best For**: Strategic planning and understanding internal and external factors.

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3. Decision Matrix (Weighted Scoring Model)

- **Steps**:
    1. List decision criteria.
    2. Assign weights to each criterion.
    3. Score each alternative against the criteria.

4. Calculate the weighted score for each option.
5. Choose the highest-scoring option.

- **Best For**: Comparing multiple alternatives based on weighted priorities.

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4. Cost-Benefit Analysis (CBA)

- **Steps**:
  1. Identify costs and benefits of each option.
  2. Assign monetary values to each cost and benefit.
  3. Compare total costs vs. total benefits.
- **Best For**: Financial or resource-based decisions.

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5. Kepner-Tregoe Decision Analysis

- **Steps**:
  1. Define the decision to be made.
  2. Separate objectives into "musts" and "wants."
  3. Evaluate alternatives based on "must" objectives first.
  4. Score options based on "want" objectives.
- **Best For**: Technical or complex decisions with competing criteria.

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6. Multi-Criteria Decision Analysis (MCDA)

- **Steps**:
  1. Identify decision criteria.
  2. Weight each criterion based on importance.
  3. Score alternatives against each criterion.
  4. Use mathematical models to rank options.
- **Best For**: Decisions involving multiple conflicting criteria.

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7. The OODA Loop

- **Steps**:
    1. Observe: Gather information.
    2. Orient: Analyze the context.
    3. Decide: Choose an action.
    4. Act: Implement the decision.
- **Best For**: Rapid, iterative decision-making in dynamic situations.

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8. Six Thinking Hats

- **Steps**:
    - Use six "hats" to examine the decision from different perspectives:
        1. White Hat: Facts and data.
        2. Red Hat: Emotions and intuition.
        3. Black Hat: Risks and challenges.
        4. Yellow Hat: Benefits and opportunities.
        5. Green Hat: Creativity and alternatives.
        6. Blue Hat: Process control.
- **Best For**: Group decision-making and creative problem-solving.

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9. Pareto Analysis (80/20 Rule)

- **Steps**:
    1. Identify problems or factors.
    2. Rank them by their impact.
    3. Focus on the top 20% that cause 80% of the impact.
- **Best For**: Prioritizing tasks or issues with maximum impact.

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10. Pros and Cons List

- **Steps**:
    1. List all advantages (pros) and disadvantages (cons) of each option.
    2. Evaluate which list outweighs the other.
- **Best For**: Simple, straightforward decisions.

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11. Delphi Method

- **Steps**:
    1. Gather opinions from a panel of experts.
    2. Use multiple rounds of anonymous feedback.
    3. Reach a consensus through structured discussions.
- **Best For**: Forecasting and complex group decision-making.

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12. Vroom-Yetton Decision Model

- **Steps**:
    1. Analyze the decision's importance and urgency.
    2. Assess the level of team involvement needed.
    3. Follow a decision tree to identify the best leadership style (autocratic, consultative, or collaborative).
- **Best For**: Leadership and team-based decision-making.

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13. Eisenhower Matrix

- **Steps**:
    - Categorize tasks into four quadrants:
        1. Urgent and Important: Do immediately.
        2. Important but Not Urgent: Schedule for later.
        3. Urgent but Not Important: Delegate.
        4. Neither Urgent nor Important: Eliminate.
- **Best For**: Time management and prioritization.

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14. Fishbone Diagram (Ishikawa)

- **Steps**:
    1. Identify the main problem.
    2. Map out potential causes into categories (e.g., people, processes, equipment).
    3. Analyze root causes.
- **Best For**: Identifying the root causes of problems.

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15. PDCA Cycle (Plan-Do-Check-Act)

- **Steps**:
    1. Plan: Develop a strategy.
    2. Do: Implement the strategy.
    3. Check: Evaluate the results.
    4. Act: Adjust and improve.
- **Best For**: Continuous improvement processes.

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16. SCAMPER Model

- **Steps**:
    - Use SCAMPER questions to generate alternatives:
        1. Substitute.
        2. Combine.
        3. Adapt.
        4. Modify.
        5. Put to another use.
        6. Eliminate.
        7. Reverse.
- **Best For**: Creative brainstorming and problem-solving.

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17. Decision Tree

- **Steps**:
    1. Map decisions as a tree with branches for each option.
    2. Evaluate outcomes, probabilities, and potential payoffs.
- **Best For**: Decisions with multiple steps and uncertain outcomes.

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18. Risk-Reward Analysis

- **Steps**:
    1. Identify potential risks and rewards of each option.
    2. Assign weights to both risks and rewards.
    3. Compare weighted results.
- **Best For**: Balancing risk-taking and reward-seeking.

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19. Appreciative Inquiry

- **Steps**:
    1. Discover: Identify strengths and successes.
    2. Dream: Envision ideal outcomes.
    3. Design: Develop strategies to achieve the vision.
    4. Deliver: Implement and sustain improvements.
- **Best For**: Collaborative decision-making focused on positive outcomes.

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20. STAR Method (for Problem-Solving)

- **Steps**:
    1. Situation: Define the context.
    2. Task: Clarify the objective.
    3. Action: Determine steps to address the problem.
    4. Result: Measure and evaluate outcomes.
- **Best For**: Problem-solving and performance evaluation.