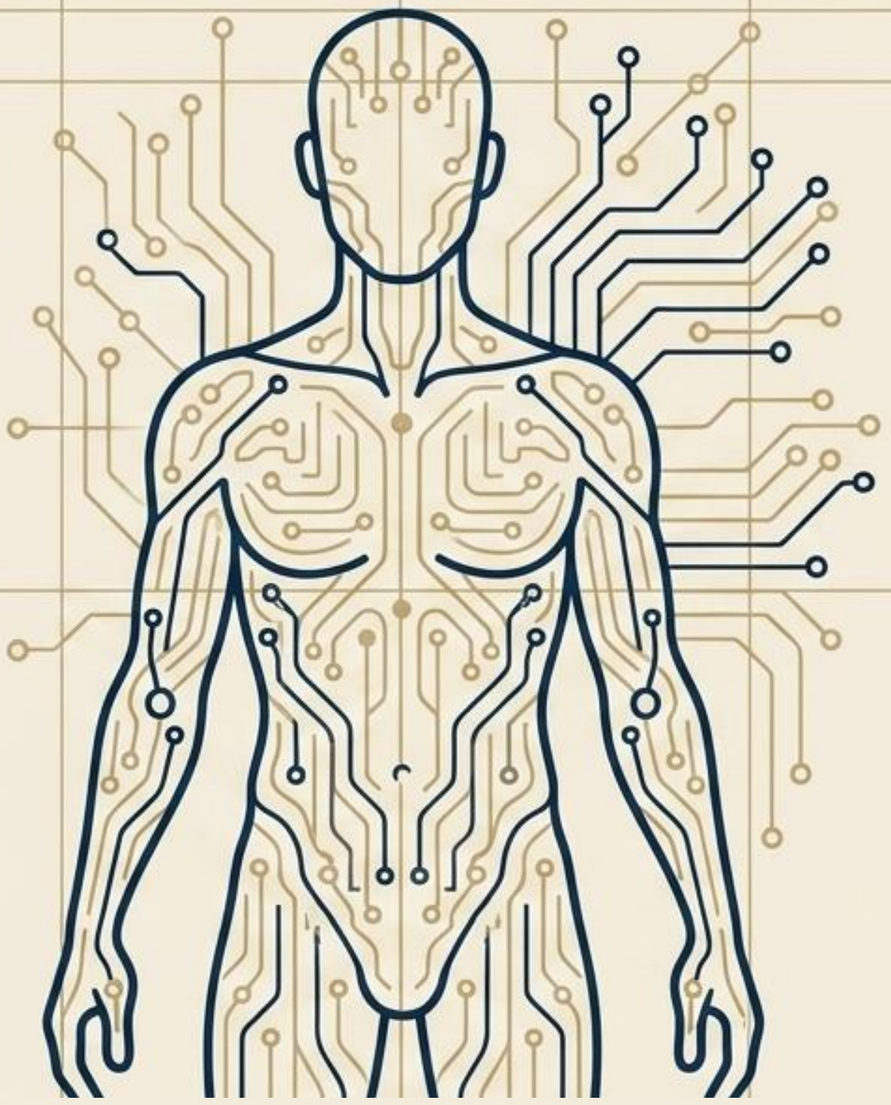
Project Human Resource Management

The Art and Science of IT Leadership



7204201 Project Management in Information Technology

Paranya Palwisut

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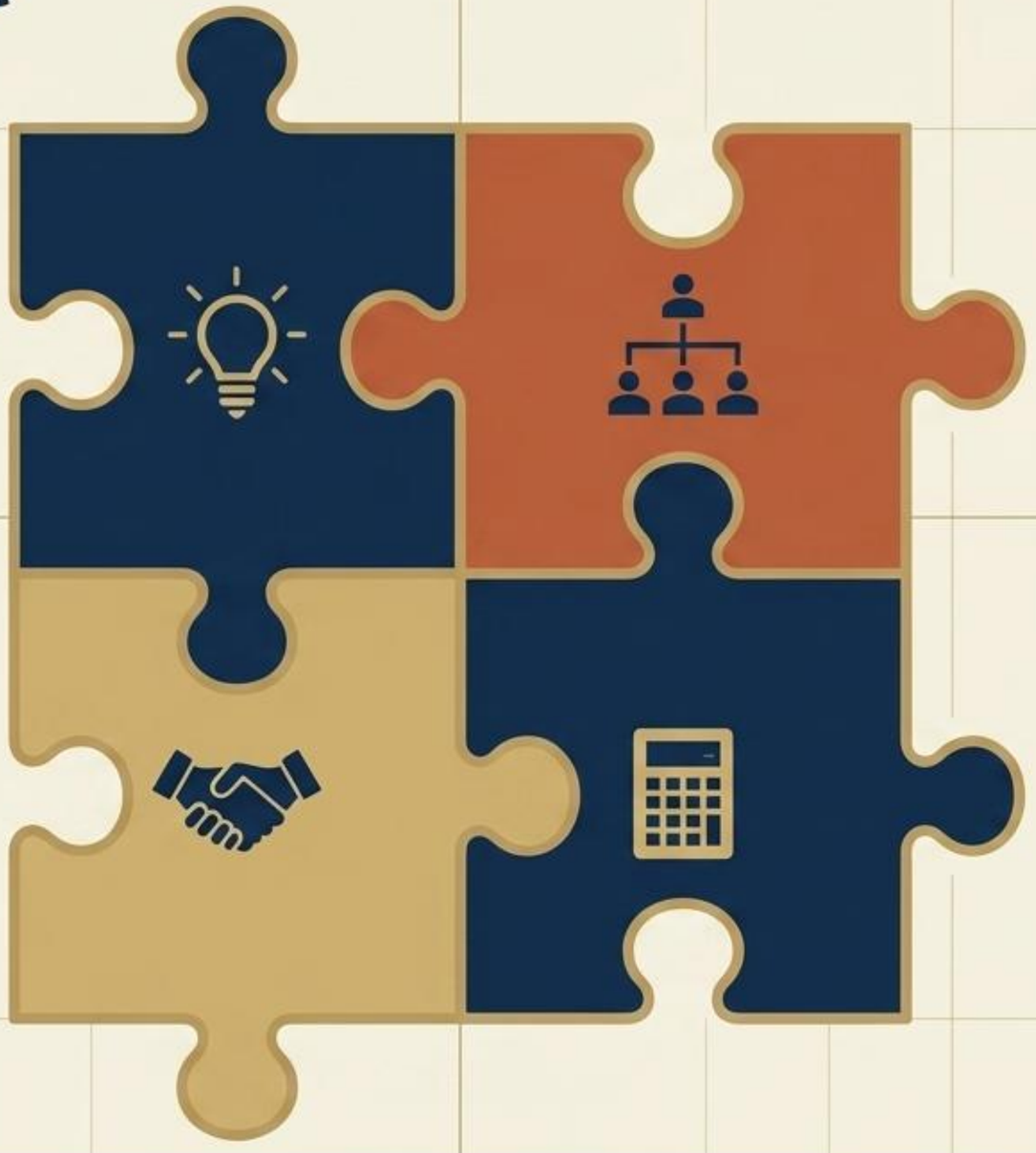
The Blueprint

01. The Ultimate Asset
(The Philosophy of HR in IT)



02. Organizational Planning
(Org Charts, RAM, Histograms)

03. Staff Acquisition & Team Development
(Ecosystems & Leveling)

04. Advanced Assignment Tools
(The Hungarian Method)

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Why Focus on “People” in IT Projects?

The Driver of Success

Technology alone cannot deliver; people dictate timelines.

Stakeholder Impact

HR management spans everyone involved in the project.

Maximum Efficiency

The ultimate goal is optimizing People as the Ultimate Asset.

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The Synthesis Framework: The 3 Pillars

1. Organizational Planning

Defining roles, responsibilities, and reporting lines.

2. Staff Acquisition

Sourcing, matching, and allocating the right talent.

3. Team Development

Building relationships, upgrading skills, and rewarding high performance.

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Pillar 1: Organizational Planning

Defining the Architecture

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Organizational Planning (The Architecture)

Establishing the structural hierarchy before work begins, allowing managers to align talent with precise project demands.

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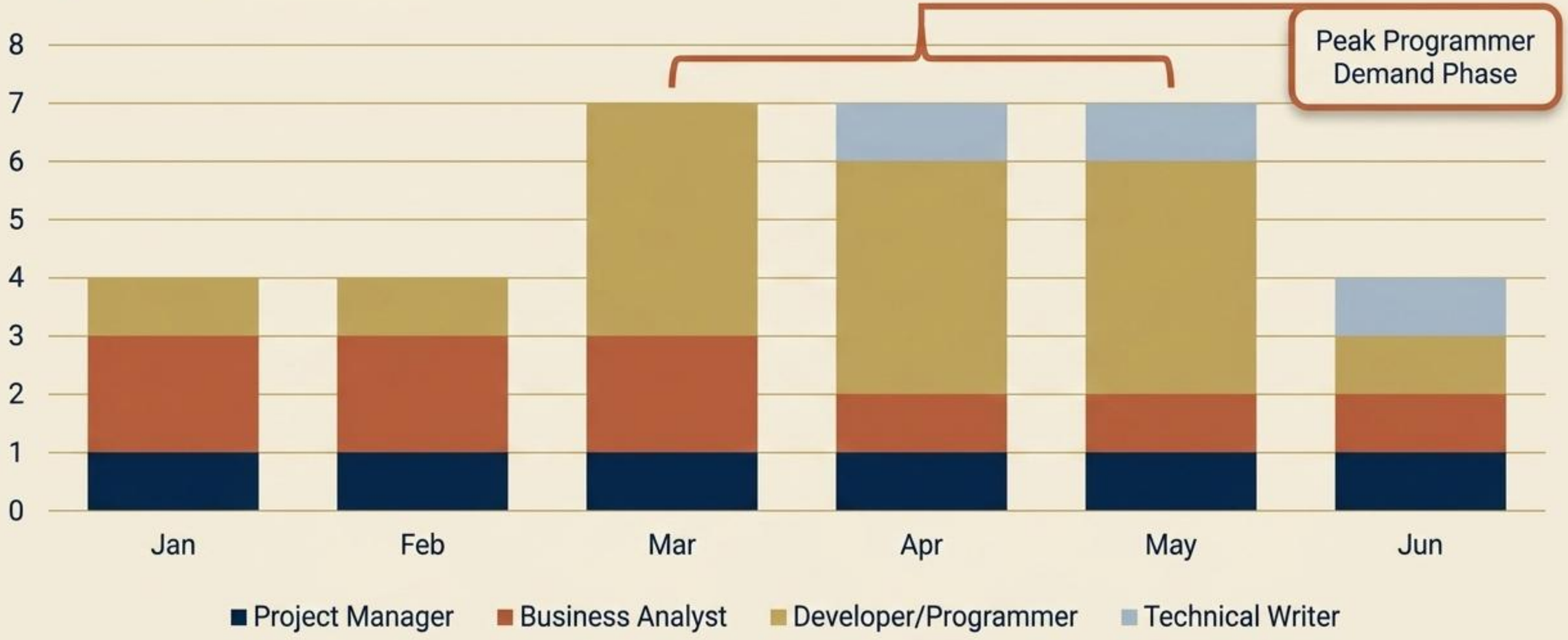
Forecasting Demand: The Resource Histogram

A Staffing Management Plan visualizes headcount requirements to anticipate and mitigate project bottlenecks.



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Defining Expectations: RAM Heat Map

	Mr. A	Mr. B	Mr. C	Mr. D	Mr. E
Unit Test	S	A	I	I	R
Integration Test	S	P	A	I	R
System Test	S	P	A	I	R
User Acceptance Test	S	P	I	A	R

Legend **R** = Responsibility/Perform **A** = Accountability **I** = Input/Informed **S** = Sign-off/Approve

Mapping the **Work Breakdown Structure (WBS)** to **individuals** eliminates overlap and sets **crystal-clear expectations** across engineering teams.

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Pillar 2: Staff Acquisition

Sourcing and Populating the Structure

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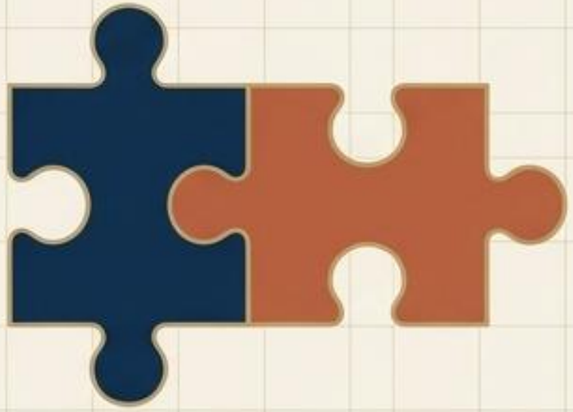
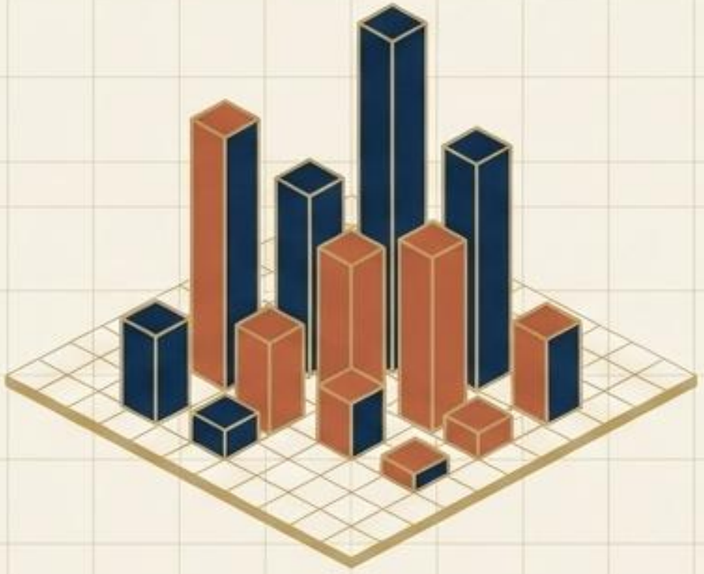


Resource Assignment

Matching specific technical skills to specialized tasks (internal or external sourcing).



Resource Loading

Tracking total resource allocation against the schedule to identify dangerous over-utilization or inefficient under-utilization.

Resource Leveling

Resolving allocation conflicts by shifting flexible tasks, ensuring consistent and sustainable resource usage over time.

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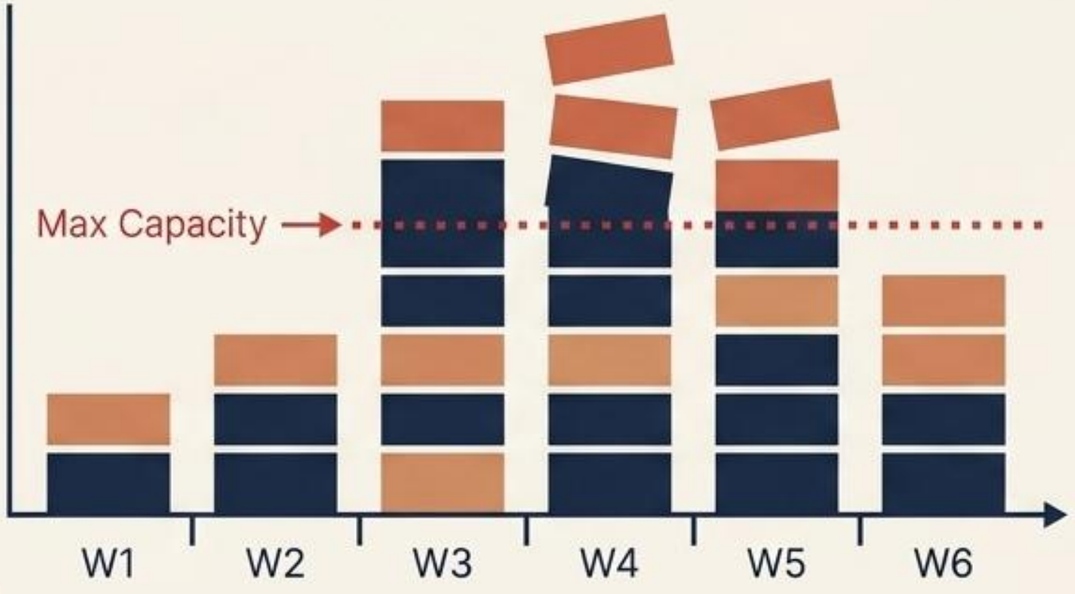
Capacity Management: Loading vs. Leveling

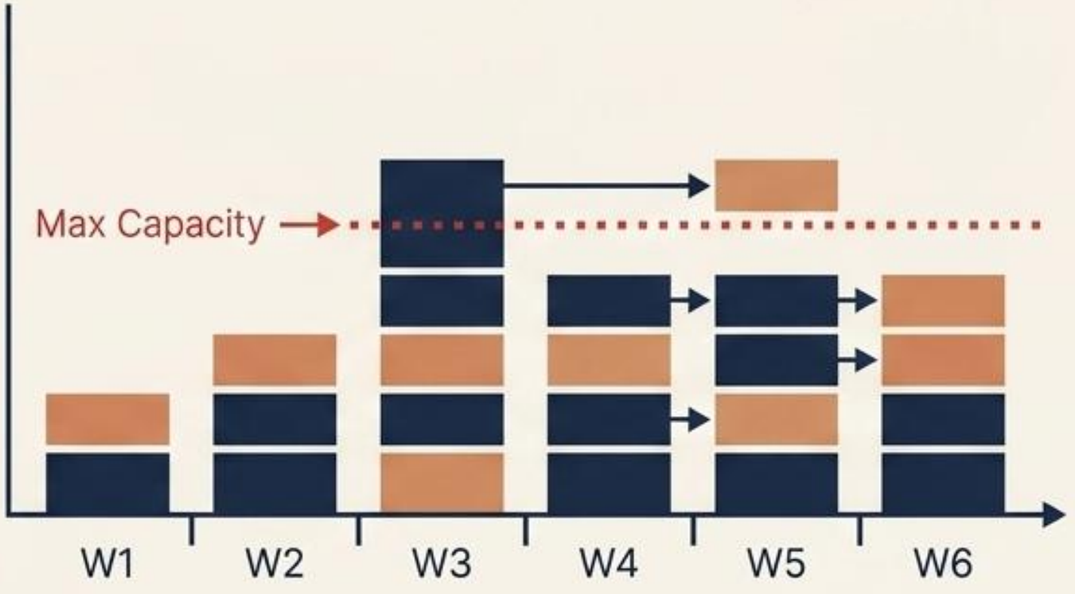
Resource Loading (The Requirement)

Focuses on alignment with schedule.
Identifies total requested hours, highlighting where demand exceeds supply.



Resource Leveling (The Solution)

Focuses on resolving conflicts.
Uses Slack to delay non-critical tasks, ensuring a steady, sustainable burn rate.



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Pillar 3: Team Development

Building a High-Performing Ecosystem

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Cultivating the Team Ecosystem

Hard Skills (Technical Mastery)

Training, upskilling, and mastering new IT tools to drive project capabilities forward.

Soft Skills (Psychology & Dynamics)

Team-building activities that foster self-awareness, mutual support, and peak psychological efficiency.

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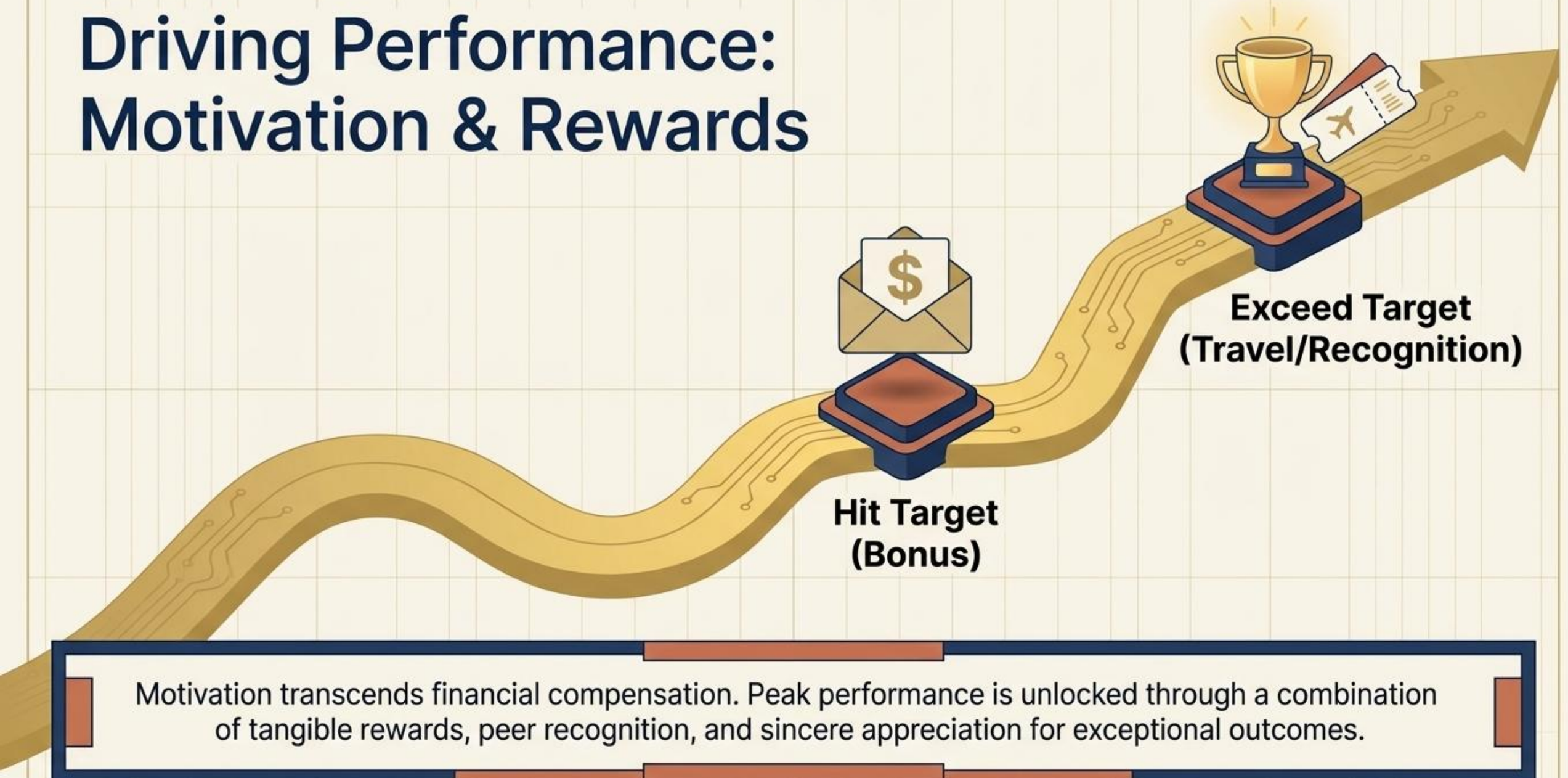
Driving Performance: Motivation & Rewards



Motivation transcends financial compensation. Peak performance is unlocked through a combination of tangible rewards, peer recognition, and sincere appreciation for exceptional outcomes.

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Hungarian Method

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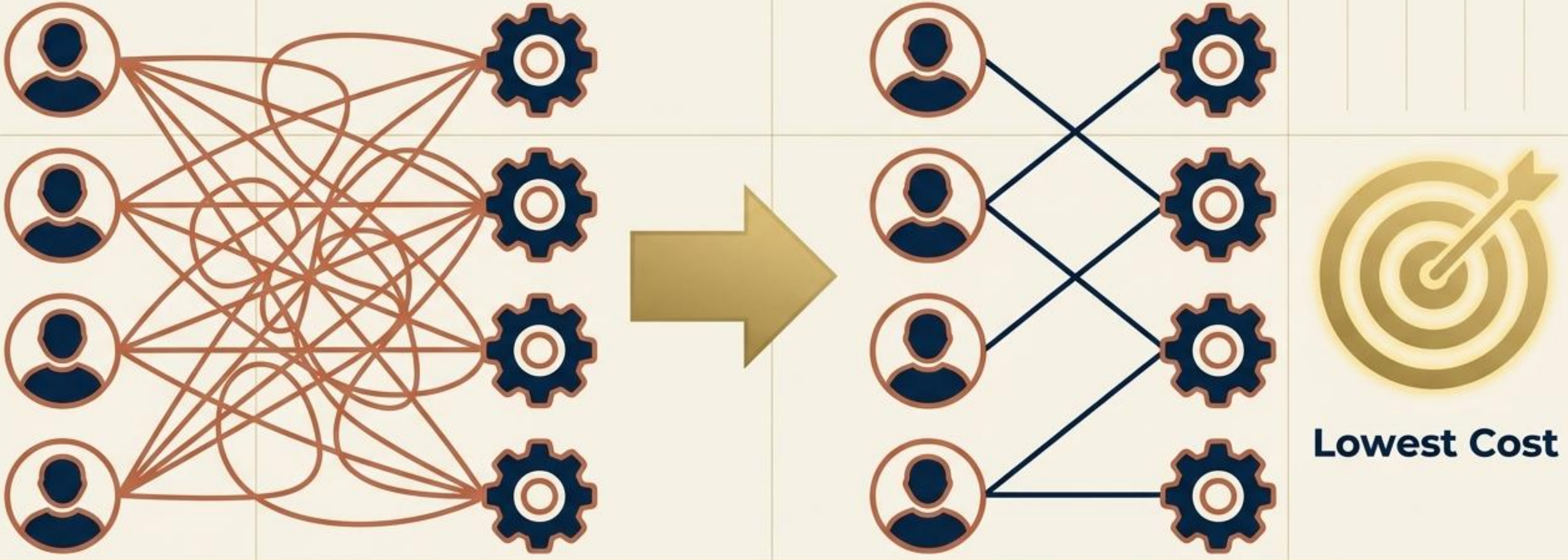
Advanced Assignment Tools: The Hungarian Method

The Problem: With an equal number of people and tasks, how do we assign roles to achieve the absolute lowest total cost or time?

The Solution: A precise 4-step mathematical algorithm.



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Step 1: Matrix Reduction

Action: Identify the lowest value in each row and subtract it from all numbers in that row. Repeat the process for the columns.

Original Data

	1	2	3	4
สุชาติ	18	10	15	12
ประวัติ	15	10	10	11
กิตติ	16	8	16	13
สุวรรณี	14	11	12	9

นำค่าต่ำสุดลบออกจากทุกค่าในแถว

Row Reduced

	1	2	3	4
สุชาติ	8	0	5	2
ประวัติ	5	0	0	1
กิตติ	8	0	8	5
สุวรรณี	5	2	3	0

นำค่าต่ำสุดลบออกจากทุกค่าในสดมภ์

Column Reduced (Final Step 1)

	1	2	3	4
สุชาติ	3	0	5	2
ประวัติ	0	0	0	1
กิตติ	3	0	8	5
สุวรรณี	0	2	3	0

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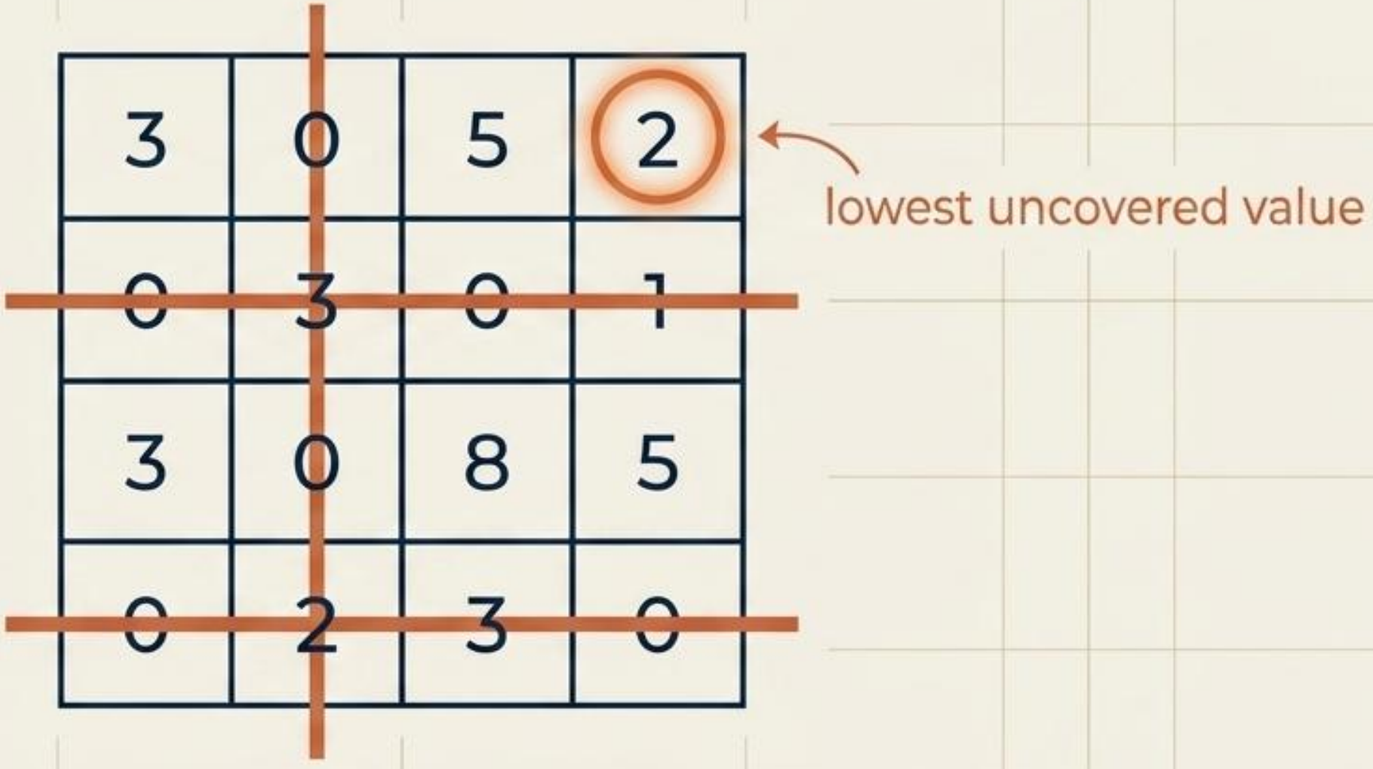
Step 2: Line Drawing

Action: Draw the minimum number of lines to cover all zeros. If the number of lines equals the dimensions of the matrix, the optimal assignment is found. If not, the matrix must be adjusted.



✓ **Lines (3) < Rows/Columns (4). Proceed to Step 3.**

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Step 3: Adjustment

Rule1: Subtract the lowest uncovered number (2) from all other uncovered numbers.

Rule 2: Add that same number (2) to any values sitting at the intersection of two lines. Leave all other covered numbers unchanged.

	1	2	3	4
สุชาติ	1	0	3	0
ประวัติ	0	5	0	1
กิตติ	1	0	6	3
สุวรรณี	0	4	1	0

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Step 4: Optimal Assignment

1. Worker 3 (กิตติ) has the only '0' in column 2 → Assigned Task 2
2. Worker 1 (สุชาติ) now has the only available '0' in column 4 → Assigned Task 4
3. Worker 4 (สุวรรณี) has a lower cost (14k) for Task 1 than Worker 2 (15k) → Assigned Task 1
4. Worker 2 (ประวัติ) is assigned the last remaining task → Assigned Task 3

Executive Summary

- ประวัติ → กิจกรรมกลุ่มที่ 3 (10,000 บาท)
- สุวรรณี → กิจกรรมกลุ่มที่ 1 (14,000 บาท)
- สุชาติ → กิจกรรมกลุ่มที่ 4 (12,000 บาท)
- กิตติ → กิจกรรมกลุ่มที่ 2 (8,000 บาท)

Total Optimal Cost:
44,000 THB

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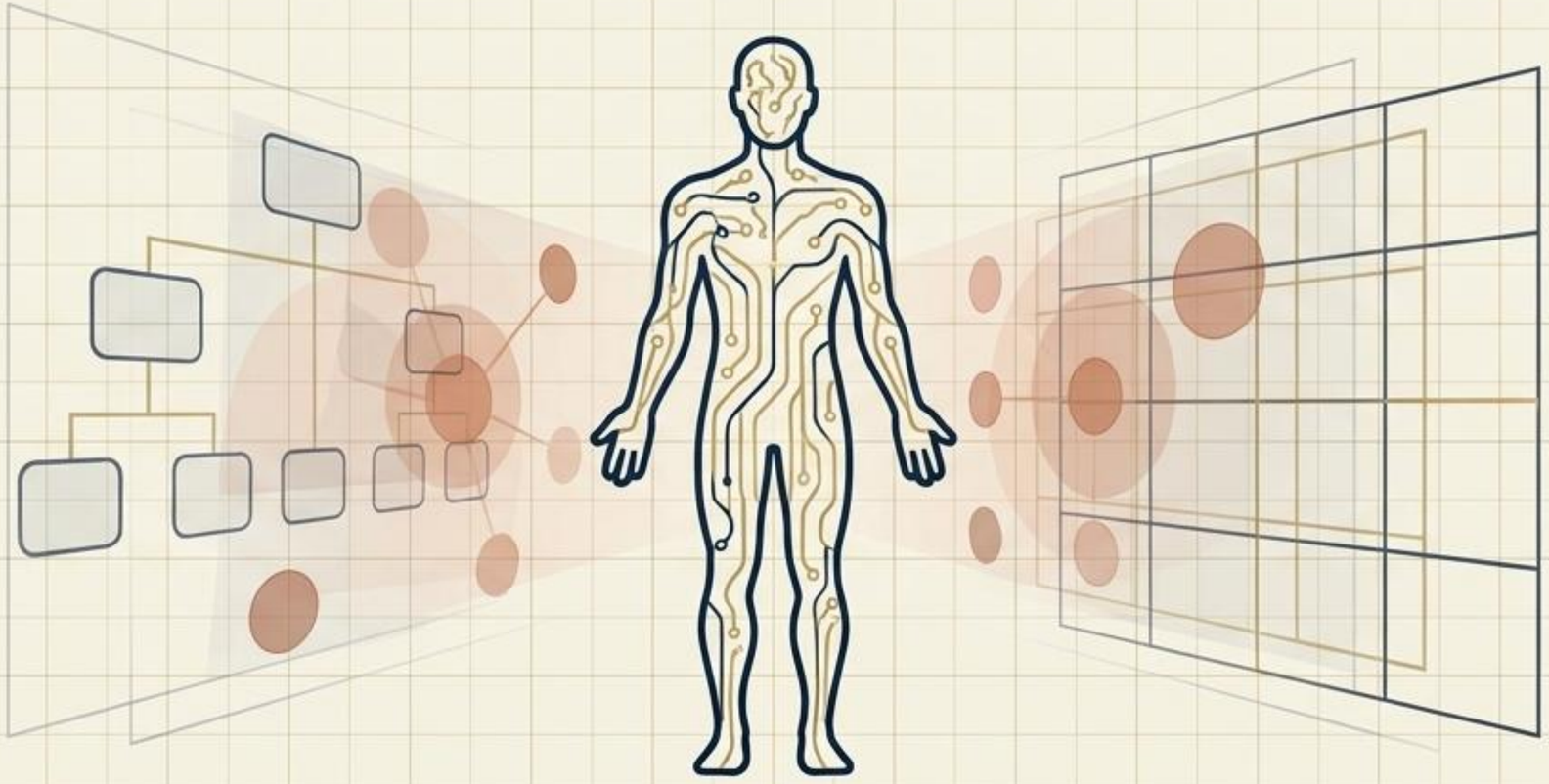
Synthesizing the Ultimate Asset



By combining rigorous mathematical optimization with a deep understanding of organizational structure and human psychology, IT Leaders transform Human Resources from an administrative function into the most valuable, strategic asset of the project.

Great IT Leadership requires equal mastery of the Art and the Science.

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