Predictive Retention: How TechNova Transformed Talent Management with AI

A Case Study in Proactive, Data-Driven HR

TechNova Corporation

A Competitive Advantage Was Becoming a Liability

TechNova Corporation

Industry: Enterprise Software & Cloud Services

Annual Revenue: $1.8 Billion

Employees: 8,500

19.5%
Annual Turnover
(vs. 13.2% Industry Avg)

24%
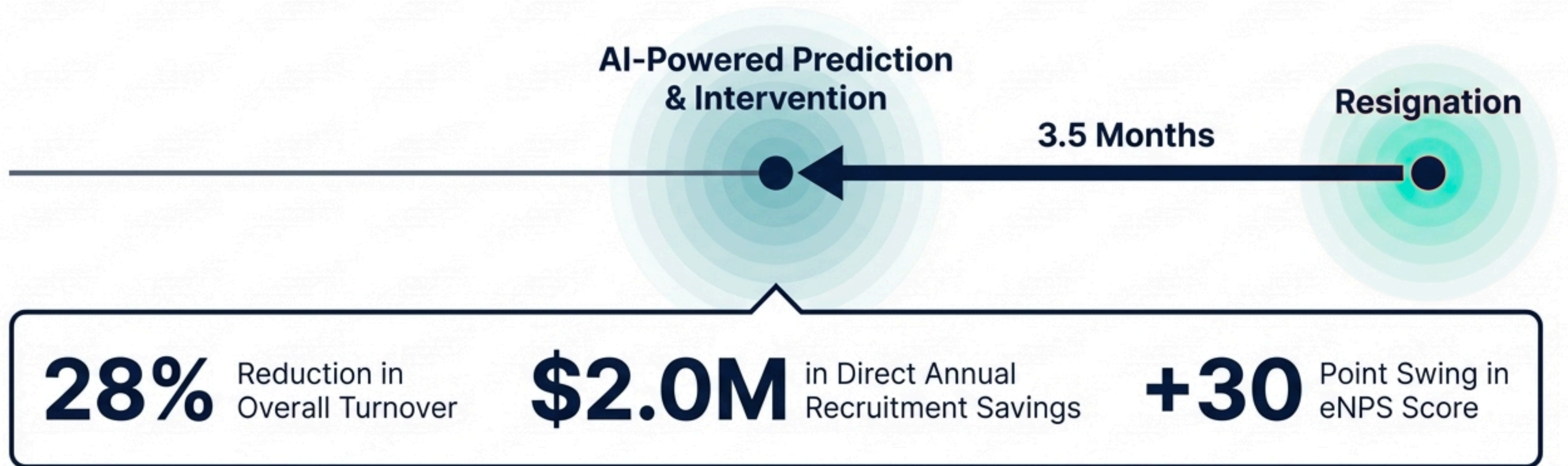Turnover in Critical Tech Roles

–12
Employee Net Promoter Score (eNPS)

68%
Of Departures were 'Regrettable' High-Performers

Shifting from Reactive Exit Interviews to Proactive Retention

AI-Powered Prediction & Intervention

Resignation

3.5 Months

28% Reduction in Overall Turnover

$2.0M in Direct Annual Recruitment Savings

+30 Point Swing in eNPS Score

TechNova built an AI-powered system to identify flight risk months in advance, enabling managers to intervene before it was too late.

Layer 1: Building a 360° View of the Employee Experience

Behavioral Signals
Slack activity patterns, L&D platform engagement, internal job portal browsing.

HR System Data
Compensation ratio, promotion velocity vs. peers, performance rating trends.

Organizational Context
Manager effectiveness scores, team attrition rates, project lifecycle stage.

External Signals
LinkedIn profile updates, industry hiring trends, competitor funding announcements.

Aggregating over 50 data points per employee.

Layer 2: Identifying Flight Risk with High Precision

Model Performance Metrics

76%

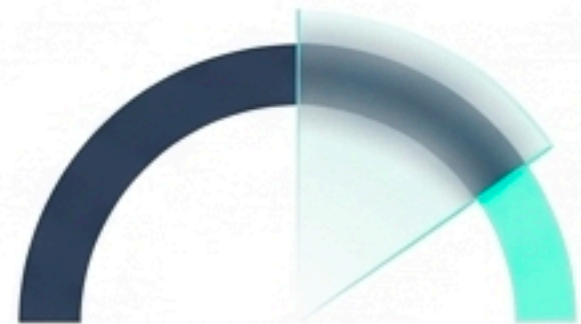**Precision**
Of those flagged, 76% showed genuine risk

82%

Recall
Caught 82% of employees who eventually left
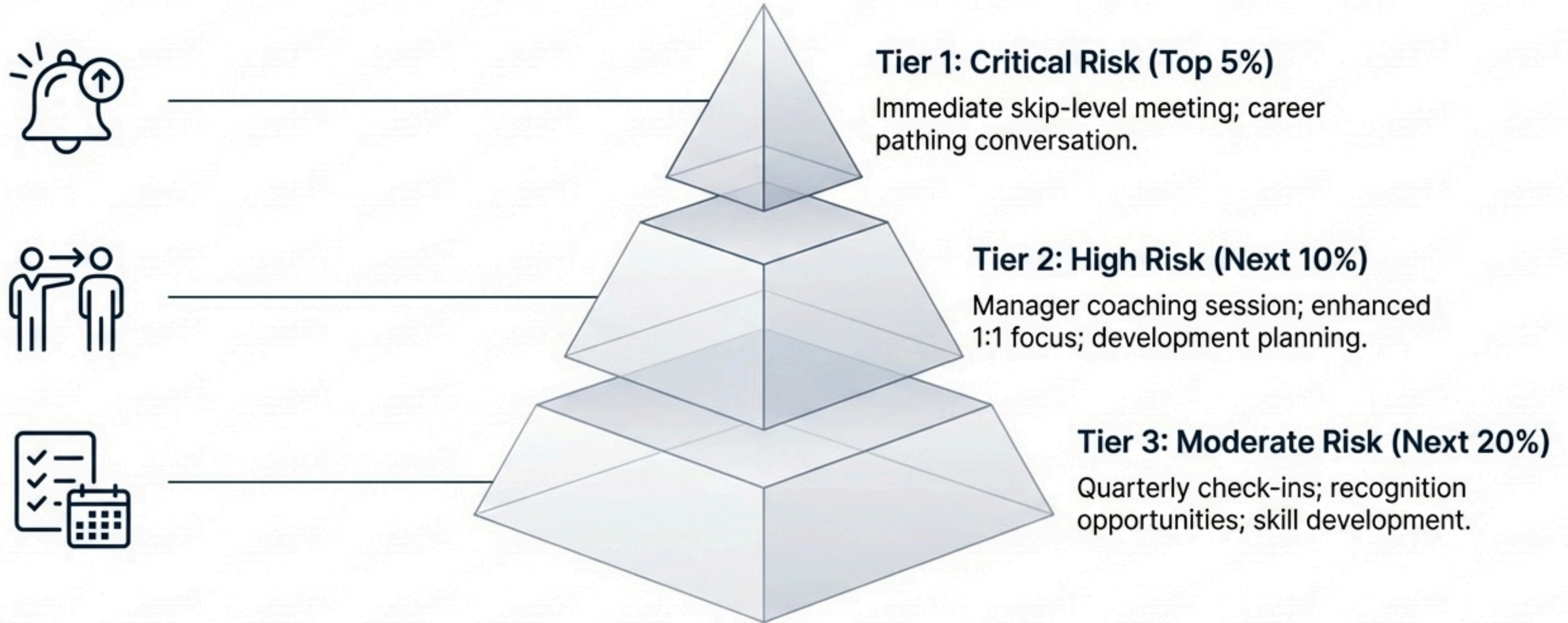
Lead Time
3.5 Months
Average prediction window before resignation

Top Predictive Features Discovered

1. Manager relationship quality score

2. Peer departure rate (last 90 days)

3. Time since last promotion (vs. peer average)

4. Decline in internal collaboration metrics

5. Compensation percentile drop

Layer 3: Translating Insight into Guided Intervention

Tier 1: Critical Risk (Top 5%)

Immediate skip-level meeting; career pathing conversation.

Tier 2: High Risk (Next 10%)

Manager coaching session; enhanced 1:1 focus; development planning.

Tier 3: Moderate Risk (Next 20%)

Quarterly check-ins; recognition opportunities; skill development.

The system is not just an alert; it's a GPS that guides manager action with specific, tiered playbooks.

A Phased Rollout to Ensure Success and Adoption

Phase 1 (Months 1-3): Pilot & Validate

Phase 2 (Months 4-9): Refine & Expand

Phase 3 (Months 10-12): Full Deployment

Phase 4 (Ongoing): Continuously Improve

1 ———— **2** ———— **3** ———— **4**

Deployed in Engineering (500 employees). Validated model and focused on manager training.
Result: 15% turnover reduction in pilot group.

Incorporated feedback. Developed manager dashboards and rolled out 'Stay Conversation' training for all people managers.

Company-wide rollout. Integrated with performance management systems.

Implemented A/B testing of interventions and monthly model retraining cycles.

The Transformation, by the Numbers (18 Months Post-Implementation)

Metric	Baseline (Pre-AI)	Current State	Change
Overall Turnover	19.5%	14.0%	-28.2%
Critical Role Turnover	24.0%	15.5%	-35.4%
eNPS Score	-12	+18	+30 Points
Recruitment Costs	$7.2M Annually	$5.2M Annually	-$2.0M
Project Delays	3–4 weeks avg	1.2 weeks avg	-66%

Beyond the Metrics: A Fundamental Shift in Culture

"

The early warning system completely changed how I approach 1:1s. Instead of generic check-ins, I can have targeted conversations... Last quarter, I retained 3 engineers who were considering offers elsewhere because we addressed their concerns proactively.

— Senior Engineering Manager

"

We've shifted from being reactive firefighters to strategic partners. The predictive insights allow us to work with managers on retention strategies before it's too late. It's transformed our credibility with the business.

— HR Business Partner

"

I was actually updating my resume when my manager scheduled a career development conversation. The timing was uncanny... Six months later, I'm in that role and glad I stayed.

— Retained Employee

The Blueprint for Success: Critical Enablers

Privacy–First Approach
Transparency and clear opt-in options built the trust needed for an **89% employee participation rate.**

Manager Enablement
The AI is a tool; the manager is the solution. **40 hours of 'Stay Conversation' training** was non-negotiable.

Quality Interventions
Personalized action plans based on individual drivers had a **72% success rate** in retaining high-risk employees for 12+ months.

Continuous Improvement
The model is a living system, retrained monthly with new data and A/B tested interventions to maintain relevance.

Executive Sponsorship
CEO-level buy-in made retention a top-3 company priority, ensuring resources and accountability.

Navigating the Inevitable Roadblocks

Challenge	Solution
Manager Skepticism	Positioned as a **decision-support tool**, not a replacement for judgment.
Alert Fatigue	**Refined thresholds** and moved from constant alerts to a weekly digest.
'Gaming the System'	Interventions focused on **career growth and environment**, not just compensation.
Model Drift	Increased retraining frequency and added **external market indicators**.

The Clear Return on Investment

Total Investment

$1.9M

(Platform, Training, Team)

Direct Savings (Year 1)

$3.4M

(Recruitment, Contractor, Onboarding)

Total Indirect Value

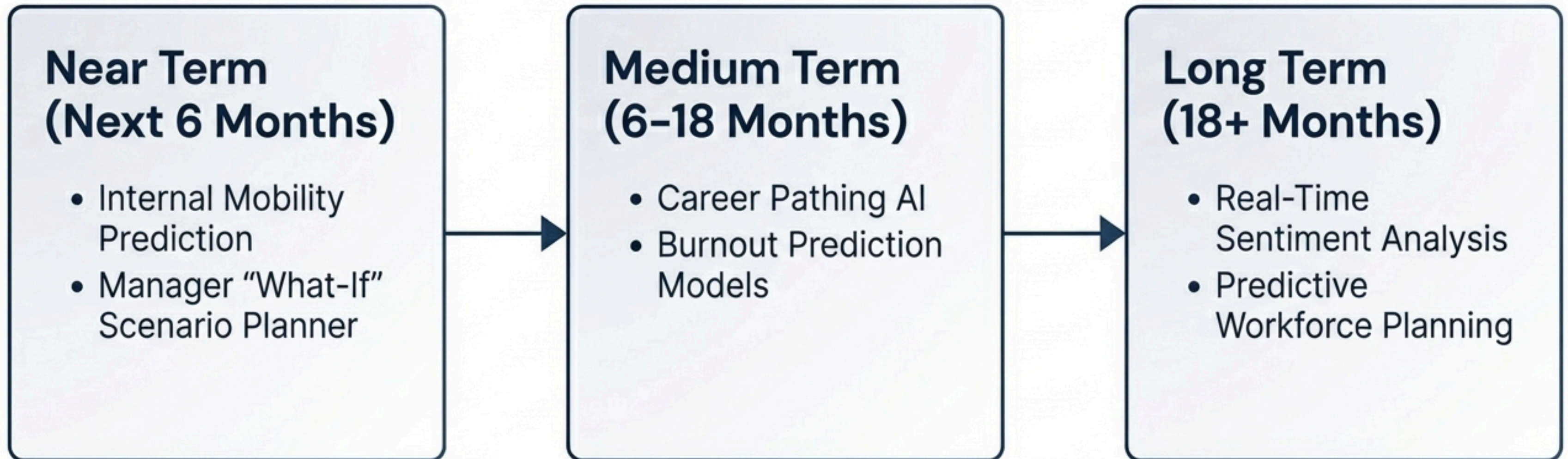## $8.1M

(Productivity, Project Delivery, Customer Satisfaction)

First-Year ROI:

505%

What's Next: Expanding the Talent Intelligence Platform

Near Term (Next 6 Months)

- Internal Mobility Prediction
- Manager "What-If" Scenario Planner

Medium Term (6–18 Months)

- Career Pathing AI
- Burnout Prediction Models

Long Term (18+ Months)

- Real-Time Sentiment Analysis
- Predictive Workforce Planning

Retention as a Predictable, Manageable Outcome

1. **AI Augments, Not Replaces:** The system empowers managers with insights; it does not replace their judgment.
2. **Trust is Non-Negotiable:** Privacy and transparency are the foundational prerequisites for employee participation and success.
3. **Prediction is Useless Without Action:** The true value is in the guided intervention playbooks, not the risk score itself.
4. **Workforce Dynamics Evolve:** Continuous model improvement and retraining are essential for sustained relevance and accuracy.
5. **True ROI is Culture + Cash:** The most profound impact is the shift to a proactive, employee-centric culture that drives both engagement and financial performance.

*Model performance and ROI calculations independently audited by PwC.

People Paradigm