

AI-Driven Product Delivery

Intelligent Product Engine: AI enabled by design, governed by intent

"Allegion— it's a place where our values drive real impact and innovation."

— Ashly, Software Engineer

Knapsack: The Governable Control Plane for AI-Assisted Product Delivery

Allegion's commitment to impact and innovation deserves an AI foundation built on the same principles. Knapsack's Intelligent Product Engine converts your fragmented product knowledge into executable intelligence that AI can use safely—giving you the confidence to let AI *act*, not just advise. **This is AI that builds the way you build—governed, consistent, and true to who you are.**

Knapsack: The Operating System for Allegion's Intelligent Design Future

INVESTMENT SUMMARY

Compelling ROI with Low Year 1 Entry

\$8.4M

3-Year Net
Advantage

835%

Return on
Investment

<12mo

Payback Period

\$105K

Net New Year 1
Spend

Year 1: Low-Risk Entry

- \$105K net new Knapsack investment
- Figma maintained in parallel (\$126K existing)
- No workflow disruption during transition
- Break-even by Month 5

Years 2-3: Full Value Realization

- \$255K/year full platform + services
- Figma eliminated, budget reallocated
- \$1.7M+ annual capability value
- AI-augmented design operations

3-Year Total Investment: \$615K → \$4.8M Value Created

THE PROBLEM

AI Without Governance Creates Risk

1

Inconsistent AI Output

AI-generated UIs lack enforcement of Allegion's design system. No component standards or governance checks means variance and quality issues across every generation.

2

Fragmented Design Tools

Assets scattered across Figma, Storybook, ZeroHeight, and code repos. No single source of truth for AI or teams to reference—leading to duplicated effort and drift.

3

AI Knowledge Gap

LLM-based tools don't know which components are approved or how to use them correctly. AI lacks context about Allegion's guidelines, causing misuse and extensive rework.

4

Compounding Technical Debt

Without a governing layer, rapid AI adoption results in brand inconsistency, compliance gaps, and unapproved component proliferation—debt that slows future delivery.

THE SOLUTION

Knapsack Intelligent Product Engine

1

AI Control Plane

Knapsack's IPE acts as a centralized "brain" between Allegion's design ecosystem and AI tools. It aggregates design system data into a unified, AI-ready format with built-in rules and constraints.

2

Unified Design Source

IPE ingests assets from Figma, Storybook, GitHub, and token files—normalizing into a single source of truth. AI has full context of approved components, themes, and implementations.

3

Governed AI Execution via MCP

Via Knapsack's Model Context Protocol (MCP), AI-generated code "knows" Allegion's design language. AI can safely generate components, update tokens, and create patterns—all within approved guardrails. Outputs use correct components, tokens, and standards by default, with validation built-in.

4

Enterprise Compliance & Risk Reduction

Embedded compliance and accessibility rules ensure AI designs meet regulatory and branding requirements. The control plane enforces rules, prevents violations, and maintains audit trails. AI builds exactly what you would—but faster—under governance that reduces model risk.

AI ENABLEMENT

Model Context Protocol: Safe AI Execution

Component Generation

AI generates new components using approved patterns, tokens, and accessibility standards. MCP ensures outputs match Allegion's design system before code is written.

Token Updates

AI proposes token changes across platforms (CSS, JS, iOS, Android) with governance checks. Changes propagate consistently with validation at each step.

Pattern Documentation

AI creates usage documentation from code, ensuring docs stay current. MCP maintains context between code, design, and documentation automatically.

Design-to-Code Translation

AI converts design specs into production-ready code using approved components. Governance layer prevents deviations from standards.

The Gap We Bridge: AI can generate code at scale—but enterprises can't let it *act* without governance. Knapsack's MCP provides the control plane that makes AI execution safe, bridging the gap between "AI can do this" and "we'll let AI do this."

BUSINESS IMPACT

Key Outcomes & Benefits

Higher-Quality Output

AI-generated UIs align 1:1 with Allegion's design system. Designs come out right the first time, with far fewer review corrections or accessibility errors.

Faster Release Cycles

Move from quarterly to weekly releases. AI delivers code that is ~90% complete and 100% on-guidelines, shipping features in days instead of weeks.

Reduced Rework

Cut regeneration cycles and iteration churn. Teams spend less time fixing AI outputs—fewer validation failures means more time building value.

Higher Code Acceptance

Developers use AI-generated code directly more often. Pre-approved patterns mean engineers accept AI output at higher rates, accelerating the entire SDLC.

Risk Reduction

Governance layer prevents brand violations, accessibility gaps, and compliance issues before they reach production. AI execution becomes auditable and safe.

Maturity Progression

Move from fragmented design systems to intelligent, AI-assisted operations. Knapsack enables progression through maturity levels with measurable outcomes.

90%

AI Output
Completeness

4x

Faster Release
Cycles

75%

Reduced Design
Overhead (Y3)

100%

On-Brand
Compliance

QUANTIFIED VALUE

\$1.71M Annual Capability Value

Capability	Knapsack	ZeroHeight	Annual Value
Automated Code-Doc Sync	✓ Auto-updates	✗ Manual	\$156,000
Multi-Platform Token Engine	✓ CSS/JSS/iOS/Android	✗ Display only	\$122,400
Live Component Rendering	✓ Production code	✗ Embed only	\$265,200
Git-Based Developer Workflow	✓ PR integration	✗ Web UI only	\$459,000
AI/MCP Integration	✓ Production-ready	✗ None	\$200,000
Multi-System Governance (10+ brands)	✓ Built-in	✗ Single system	\$117,000
Figma Replacement (Y2+)	✓ Code-based design	✗ Requires Figma	\$126,000
Total Annual Capability Value			\$1,712,600

PARTNERSHIP APPROACH

Phase-Gated Delivery: Earn the Right to the Next Phase

Each phase builds trust and proves value before advancing. Clear exit criteria ensure measurable outcomes at every milestone.

PHASE 1

Foundation

Product System Foundation

\$350-450K

16-20 weeks

Exit Criteria:

- Teams publish without intervention
- First component to production
- Access no longer blocking

PHASE 2

Activation

Control Plane Activation

\$225-325K

12-16 weeks

Exit Criteria:

- Token strategy operating
- Governance model active
- Decisions flow through system

PHASE 3

Intelligence

AI Enablement

\$165-225K

8-12 weeks

Exit Criteria:

- AI-assisted change ships
- Teams trust governed output
- ROI story documented

PHASE 4

Scale

Enterprise Expansion

Platform ARR

Ongoing

Exit Criteria:

- 10+ teams active
- ROI metrics published
- Self-service operating

Why Phase-Gated?

Each phase must prove value before advancing. This ensures Allegion sees measurable ROI at every milestone, reduces risk, and builds organizational trust in the platform. We earn the right to the next phase through demonstrated outcomes.

IMPLEMENTATION

3-Year Roadmap: Mapped to Partnership Phases

YEAR 1

Foundation Phase

Phase 1: Stand up Knapsack platform. Migrate components & tokens. Train teams. Figma runs in parallel—no disruption.

\$231K

\$105K Knapsack + \$126K Figma

Exit: Teams publishing, first production component

YEAR 2

Activation → Intelligence

Phase 2: Figma eliminated. Control plane operational. **Phase 3:** MCP integrated. AI workflows active. Single source of truth operational.

\$255K

Full platform + services

Exit: Governance active, AI-assisted changes shipping

YEAR 3

Scale Phase

Phase 4: AI-assisted component generation. Intelligent audits. ~75% reduction in design overhead achievable. Enterprise-wide expansion.

\$255K

Steady state

Exit: 10+ teams active, ROI metrics published

Key Milestones & Phase Gates

- **Month 5:** Foundation Phase exit criteria met; break-even achieved
- **Month 12:** Activation Phase begins; Figma contract non-renewed
- **Month 18:** Intelligence Phase exit; MCP server integrated; AI workflows operational
- **Year 3:** Scale Phase active; AI-augmented design ops vision fully realized

FINANCIAL IMPACT

Return on Investment

3-Year Cost

\$615K

3-Year Value

\$4.8M

\$4.8M

3-Year Value
Created

\$8.4M

Net Advantage vs
ZeroHeight

5 mo

Break-Even Point

835%

Year 2+ ROI

Budget Strategy

After Year 1 investment, **no additional budget needed** beyond current design tooling spend. Program is budget-neutral by Year 2 by repurposing Figma.

vs. Status Quo

ZeroHeight + Figma = **\$4.3M cost** with zero added value. Knapsack = **\$4.0M net gain**. That's an **\$8.4M swing** in Allegion's favor.

RECOMMENDATION

Approve Year 1 Investment

Strategic Alignment

Knapsack is the **only platform** supporting Allegion's 2026 vision for AI-driven design operations. It bridges current state to autonomous, AI-augmented product development. IPE is AI enabled by design—not retrofitted.

Phase-Gated Risk Reduction

Parallel operation in Year 1 with Figma as safety net. Teams maintain current output while setting stage for exponential gains in Year 2+. Each phase has clear exit criteria—we prove value before advancing.

From Intent to Production, Governed

Knapsack converts design intent into executable intelligence. MCP enables AI to act safely within approved guardrails, reducing the gap between "AI can do this" and "we'll let AI do this."

Operational Resilience

Consistency through governance reduces technical debt and brand risk. AI-assisted operations maintain quality at scale, ensuring Allegion's values are reflected in every output.

1. Execute Foundation Phase

Year 1 commitment: \$105K net new. Phase 1 establishes platform foundation with clear exit criteria.

2. Maintain Figma (Year 1)

Continue existing \$126K contract for parallel operation during Foundation Phase transition

3. Gate to Activation Phase

Upon Foundation Phase exit criteria met, advance to Phase 2. Plan Figma non-renewal for Year 2 start.

4. Track Phase Metrics

Monitor phase-specific success metrics: Foundation (production use), Activation (governance decisions), Intelligence (AI-assisted changes)

\$105K Net-New Year 1 Investment → \$8.4M 3-Year Upside

Modernize product delivery. Secure Allegion's competitive edge in an AI-first era.