LightSignal – Prefilled Spec & Handoff (Based on Prior Docs)

This is a complete, prefilled version of your SMB platform specification based on all uploaded context and prior project threads.

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1) Business Overview

Business Name: LightSignal
Mission: Empower small and midsize businesses to make smarter financial decisions through AI-driven forecasting, scenario analysis, and proactive insights.
Core Goal: Provide an intelligent business command center that bridges accounting data (QuickBooks or live data) with real-time advisory intelligence and forecasting.
Success Outcomes:

1. Clear, modern financial dashboard with actionable insights

2. Dual-AI analysis combining internal financial health and external market context

3. Scenario simulation for every major business decision

4. Demo mode that can simulate any business in any industry

5. Seamless transition to Live mode with real accounting data integration

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2) Audience & Use Cases

User Personas:

- Small business owners (no finance background)

- Bookkeepers or accountants managing multiple clients

- Advisors and consultants

Top Pain Points: Lack of clarity, time, and context for decision-making. Most SMB owners rely on bookkeepers for data they don't understand.

Top 3 Questions Users Ask:

1. Can I afford to hire another employee or buy new equipment?

2. How long will my cash last at current burn rate?

3. How am I performing compared to similar businesses in my industry?

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3) Data Modes & Sources

Demo Mode: QuickBooks Playground + Vector embeddings for 10,000+ NAICS-based business scenarios.
Live Mode: QuickBooks, Xero, Wave, other alternatives CSV uploads, or manual entry.
Other Sources: Banking APIs, Payroll, and CRM integrations.
Provenance Rules: Each card shows source ("QuickBooks", "Playground", "Manual") with confidence badges and sync timestamps.

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4) Tabs – Detailed Breakdown

Tab 1: Dashboard

KPIs:

(Displayed as compact cards across the top, each color-coded with trend arrows)

- **Revenue (MTD) — shows current month revenue vs last month % change**

- **Net Profit / Margin % — quick profitability snapshot**

- **Cash Flow (MTD) — inflows vs outflows this month**

- **Runway (Months) — estimated months of cash left at current burn**

- **AI Health Score — data completeness + forecast confidence rating**

Tooltip on each card: "Click to open full details in Financial Overview."

Sections:

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1. Business Snapshot Cards

- Compact KPI Summary Grid **with sparkline trends.**

- **At-a-Glance Message:**
  "Revenue up 7.2% vs last month · Expenses flat · Profit margin improved to 28%."

- **Mini Alert Badges:**

    - 🔴 **Low cash alert if runway < 3 months**

    - 🟡 **Spending spike detected**

    - 🟢 **Ahead of target**

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2. AI Business Insights

(Auto-generated daily from the AI engine — combines OpenAI + Pinecone context)

- **"Your profit margin improved, but cash conversion slowed — consider faster invoice collection."**

- **"Labor costs trending 11% above peers in your industry."**

- **"You could safely increase marketing by 5% to maintain margin and growth."**

- **"Explore More" → opens full insights feed in the Financial Overview tab.**

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3. Quick Actions

(Simple buttons for the 3–4 most common user tasks)

- **Run a Quick Forecast → Generates 30/60/90-day projection using AI.**

- **Add a New Expense / Revenue Entry → Manual entry or sync with QuickBooks.**

- **Ask the AI Advisor → Text box: "Can I afford to hire someone next month?"**

- **View Full Financial Overview → Opens next tab with detailed breakdowns.**

   Each button triggers backend calls to `/api/scenario-analysis` or `/api/ai-insight` as defined in your dual-AI system.

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4. Upcoming Reminders

(AI-generated based on patterns, due dates, and historical actions)

- **"Quarterly tax payment due in 6 days."**

- **"Renew business insurance next week."**

- **"Payroll approval pending."**

- **"Invoice follow-up: 3 clients overdue."**

- **Snooze / Complete / Delegate buttons for each item.**

    Reminders can auto-populate from calendar integrations or AI detection (e.g., recurring vendor bills).

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5. Summary Strip (Optional Footer)

(Tiny persistent bar at bottom of screen)

- **"Cash healthy · Margins strong · No critical risks detected."**

- **Updates live as AI recalculates financial signals.**

Overall Dashboard Philosophy

"One glance = business clarity."
This tab should *not* overwhelm the user — it's about surfacing only the top five most important metrics, top three insights, and immediate next steps.
Everything deeper (ratios, forecasts, scenario modeling, AI diagnostics) lives in the Financial Overview tab, which the dashboard links into.

Tab 2: Financial Overview

Tab: Financial Overview

KPIs:

(Displayed at top as interactive cards — color-coded, clickable, and linked to deeper data in each section.)

I	KPI	Description	Industry Comparison
💰	**Total Revenue (MTD / QTD / YTD)**	Tracks all income from operations.	"You're in the top 40% for your industry."
📊	**Gross Profit / Margin %**	(Revenue – COGS) ÷ Revenue → Shows core profitability before expenses.	Green = above 35% (strong), Yellow = 20–34% (moderate), Red = below 20% (weak).
🧾	**Operating Expenses**	Payroll + Rent + Marketing + Utilities + Other Overheads.	"Your expense ratio is 28%, slightly below industry average (good)."
📈	**Net Profit / Margin %**	(Net Income ÷ Revenue) → Measures overall profitability after all costs.	"Margin of 12% exceeds your sector average of 9%."

💧	**Cash Flow (MTD)**	Inflows vs outflows → key for liquidity.	Positive flow = 🟢 healthy; sustained negative = 🔴 risk.
🔋	**Runway (Months)**	Cash on hand ÷ Monthly Burn → how long funds last.	6+ months = 🟢 stable; 3–5 = 🟡 cautious; <3 = 🔴 urgent.
⚙️	**AI Confidence Score**	Reflects data completeness and forecast reliability.	"High" = >85% data coverage; medium otherwise.

Sections:

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1. Revenue & Profitability Breakdown

Icons: 💰 📈

- **Revenue Trends:**

    - Line chart of MTD, QTD, and YTD revenue vs targets.

    - Hover tooltip: "You're up 6.8% MoM; 2.4% above your forecast."

- **COGS & Gross Margin Calculation:**

    - **Formula:** `Gross Margin = (Revenue − Cost of Goods Sold) ÷ Revenue`

    - **Plain Explanation:** "Shows how much of every dollar you keep after production costs."

    - **Good:** >40%; **Moderate:** 25–40%; **Poor:** <25%.

- - Comparison: "Industry avg gross margin for HVAC services = 33%."

- **Profit Waterfall Visualization:**

    - Revenue → COGS → Operating Expenses → EBITDA → Taxes → Net Profit.

    - Icons for each step with color-coded indicators.

- **Price Optimization Insight:**

    - AI compares current pricing vs industry benchmark using Pinecone vector data.

    - Suggestion example:

        - "Your average price per project is $8,400 vs $9,200 regional avg."

        - "Consider a 5% increase — estimated profit lift: +$16k per quarter."

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2. Expense & Cost Analysis

Icons: 🧾 🧮

- **Expense Breakdown:**

    - Pie chart of top 5 expense categories.

    - AI flag: "Marketing spend grew 14% faster than sales last quarter."

- **Expense-to-Revenue Ratio:**

    - **Formula:** `Total Expenses ÷ Revenue`

    - **Explanation:** "Measures efficiency — how much of every dollar is spent to operate."

    - **Good:** <30%; **Caution:** 30–45%; **Bad:** >45%.

- **Operating Margin:**

    - **Formula:** `(Operating Income ÷ Revenue)`

- - **Tooltip:** "Shows how profitable core operations are before taxes and financing."

  - **AI note:** "Operating margin stable at 18%, slightly above industry average (16%)."

- **AI Suggestion Example:**
  "Reducing admin costs by 5% extends your cash runway by 1.8 months."

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3. Liquidity & Solvency

Icons: 💧 🏛️

- **Current Ratio:**

  - **Formula:** `Current Assets ÷ Current Liabilities`

  - **Good:** >1.5 🟢 | **Caution:** 1.0–1.4 🟡 | **Risk:** <1.0 🔴

  - **Plain Explanation:** "Shows if you can pay your short-term bills."

- **Quick Ratio:**

  - **Formula:** `(Cash + AR) ÷ Current Liabilities`

  - Excludes inventory for stricter liquidity check.

- **Debt-to-Equity Ratio:**

  - **Formula:** `Total Debt ÷ Shareholder Equity`

  - **Interpretation:** "Measures how much financing comes from debt."

  - **Good:** <1.0 | **Moderate:** 1–2 | **Risk:** >2.

- **Interest Coverage Ratio:**

  - **Formula:** `EBIT ÷ Interest Expense`

  - "Can your earnings comfortably cover interest payments?"

- Green = >3; Yellow = 1.5–3; Red = <1.5.

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4. Efficiency & Working Capital

Icons: ⚙️ 📦

- **Accounts Receivable Turnover / DSO:**

    - **Formula:** `(Revenue ÷ Average AR)` → "How fast you collect."

    - **Good:** DSO < 40 days; "You collect 20% faster than peers."

- **Accounts Payable Turnover / DPO:**

    - **Formula:** `(COGS ÷ Average AP)` → "How quickly you pay suppliers."

    - **Tip:** "Higher DPO = conserving cash, but avoid supplier tension."

- **Inventory Turnover:**

    - **Formula:** `COGS ÷ Average Inventory`

    - "Higher = better; means goods move quickly."

    - "Your inventory turns 6.2x/year; industry avg = 5.4x."

- **Cash Conversion Cycle (CCC):**

    - **Formula:** `DSO + Days Inventory − DPO`

    - "Measures how long each dollar is tied up before returning as cash."

    - Shorter cycle = 🟢 efficient; longer = 🔴 inefficient.

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5. Cash Flow & Runway

Icons: 🔋 💵

- **Burn Rate Calculation:**

    - **Formula:** `Monthly Expenses − Monthly Revenue`

    - "How much cash you spend monthly after income."

    - "Burn = $32k/month → Runway = 7.2 months."

- **Forecasted Cash Flow Chart:**

    - AI simulation of 3–6 months ahead (base, best, worst).

    - "If sales drop 10%, runway = 5.4 months."

- **Net Cash Flow (3-month trend):**

    - Positive = 🟢 self-sustaining; Negative = 🟡 moderate; Deep Negative = 🔴 at risk.

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6. Forecast & Variance Analysis

Icons: 🔮 📈

- **Variance Table:**

    - Actual vs Forecast for Revenue, COGS, Expenses, Profit.

    - Highlight color:

        - 🟢 Within ±5% → On Track

        - 🟡 5–10% → Monitor

        - 🔴 >10% → Action Needed

- **Forecast Error %:**

    - "Your forecast accuracy improved from 82% → 89% last quarter."

- **Scenario Comparison:**

- Toggle: Base | Optimistic | Pessimistic.

- Each runs automatically through OpenAI-based forecasting models.

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7. AI Risk Monitor & Insights

Icons: ⚠️ 🤖

- "Your profit margin dropped 4% due to overtime costs."

- "Cash flow risk flagged for February: projected negative $18k."

- "Your debt ratio increased faster than peers — consider refinancing."

- "Fuel prices trending up 12% next quarter — potential COGS impact."

Each risk includes:
✅ Suggested mitigation
📊 Confidence level
📈 Industry percentile comparison

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8. Drilldowns, Reports & Exports

Icons: 📂 📤

- Expand any metric → detailed monthly data and formula explanation.

- Export options: **PDF**, **Excel**, **CSV**, or via **API sync**.

- Add "AI Note" or "Annotation" explaining data context.

- Share securely with accountant, investor, or team.

Bonus Additions (Advanced Analytics)

- **Price Elasticity Tool:**

- - AI simulates how raising/lowering prices affects sales volume & profit.

  - "Raising price by 3% may reduce sales 1.1% but increase total profit by 4.5%."

- **Break-Even Calculator:**

  - **Formula:** `Fixed Costs ÷ (Price per Unit − Variable Cost per Unit)`

  - "You need 248 sales/month to break even."

- **Industry Scorecard:**

  - AI benchmarks every ratio vs sector peers using Pinecone embeddings.

  - Simple labels: 🟢 Above Average | ⚪ Average | 🔴 Below Average.

User Experience Summary

Financial Overview = The analytical engine behind LightSignal.
It turns raw financials into context — explaining what's happening, why it matters, and how your business stacks up.
Everything is **interactive, color-coded, and explained in simple terms**, so even non-financial users instantly understand their numbers and what to do next.

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Tab: Scenario Planning Lab

KPIs:

(Displayed as summary cards at the top, comparing "Base" vs "Scenario" outcomes — color-coded and easy to scan)

I	KPI	Description	Guidance / Comparison

💰	**Revenue Δ % / $**	Percent and dollar change vs baseline.	🟢 Up > 5% = growth; 🟡 flat; 🔴 Down > 5% = watch.
📈	**Net Income Δ % / Margin %**	Effect on profitability.	"Scenario margin = 22% vs industry 19%."
💵	**Cash Flow Δ / Runway Months**	Cash effect and liquidity impact.	"Adds +2 months runway → Healthy."
🏦	**Debt / Coverage Ratios**	DSCR, ICR changes from financing or stress.	"DSCR < 1.2 ⚠ Potential covenant breach."
🔋	**Liquidity (Current / Quick)**	Ability to pay short-term bills post-scenario.	Green > 1.5; Yellow 1.0–1.4; Red < 1.0.
⚙️	**Return Metrics (ROI / IRR / Payback)**	Used for capex / investment scenarios.	ROI > 15% = Strong; Payback < 3 yrs = Excellent.

Sections:

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1. Conversational Scenario Builder

Icons: 💬 🤖

- Chat-style interface where owner types in natural language:
  "Can I afford a new tractor?" → AI replies:
  "Let's check. What's the estimated cost and how will you pay?"

  - Gathers all parameters iteratively (price, loan, maintenance, usage gain, etc.).

  - Pulls live financials from QuickBooks baseline.

  - Confirms assumptions visually before running simulation.

- **Supported lever categories:**

  - **Revenue & Demand:** price ±%, new clients, volume shifts, churn.

  - **Costs & Margins:** COGS %, labor rate, efficiency gain.

  - **Staffing:** hire/reduce, utilization.

  - **Capex & Assets:** buy/lease equipment, vehicles, property.

  - **Financing:** new loan, refi, credit draw, equity injection.

  - **Working Capital:** AR/AP/inventory policy.

  - **Expansion & Strategy:** new region/product/partnership.

  - **Risks & Shocks:** macro, regulatory, supply, emergency.

- **User Prompts & Clarifiers:**

  - "Will this purchase increase revenue or reduce costs?"

  - "Is it financed or cash?"

  - "Over what timeframe should we measure impact?"

- **Tooltip Icons** for education:

  - ℹ️ = explains meaning ("ROI means return on investment — how much profit per dollar spent").

  - ⚖️ = industry median guidance (e.g., "Typical ROI for construction equipment ≈ 12–18%").

- ○ 🟦 = example from peers ("Farms in your region saw 7% fuel savings after similar upgrade").

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2. Scenario Results Dashboard

Icons: 📊 💡

- **Base vs Scenario Cards:**

  - ○ Revenue, Net Income, Cash, Runway, Liquidity, Debt Ratios.

  - ○ Each labeled with Δ % and AI confidence badge.

- **Visuals:**

  - ○ **Waterfall Chart:** shows each driver's contribution (e.g., price ↑ + $50k profit; loan payment − $12k).

  - ○ **Tornado Chart:** sensitivity of key variables.

  - ○ **Cash Curve:** 30 / 60 / 90-day bands + confidence intervals (p5 / p50 / p95).

  - ○ **5-Year Outlook:** base vs scenario lines.

- **KPIs auto-explain:**

  - ○ "Your margin improves 2 points because efficiency offsets new loan cost."

  - ○ "Cash dips $40k next quarter then recovers by Q3."

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3. AI Advisor Recommendations

Icons: 🧠 ✍️

- Generates a **plain-English summary**:
  "Buying the tractor is financially feasible (ROI 17%) but expect cash tightness for two months."

- **Action Plan Cards:**

- 3–5 concrete steps with impact and timeframe.

  - "Negotiate supplier terms (+8 days cash float)."

  - "Increase service price by 2% to cover loan interest."

- Confidence indicator 🔵 / 🟡 / 🔴 based on model certainty.

- **Risk Flags & Warnings:**

  - "⚠ DSCR 1.18 — close to bank covenant limit."

  - "🟥 Runway drops below 3 months in stress case."

- **Positive Signals:**

  - "Projected fuel savings cut costs by $4.2k per year."

  - "Added capacity could raise annual output 7%."

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4. Peer Intelligence Panel

Icons: 👥 🌍

- Pulls cohort benchmarks from **/api/ai/benchmarks/compare** via Pinecone.

- Displays: Gross Margin %, Revenue / Employee, CCC, AR/AP Days.

- "Peers with similar purchases averaged ROI = 15%, Payback = 2.7 yrs."

- Source badges: QuickBooks Cohort, Gov Data, Public Filings.

- Tooltip: "Assisted by peer data (used_priors = true)."

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5. Long-Range Outlook & Stress Tests

Icons: 🕐 ⚡

- **Horizon Selectors:** 3 mo | 6 mo | 12 mo | 2 yr | 5 yr.

- **Monte Carlo Runs:** 1,000 simulations → p5/p50/p95 bands.

- **Stress Scenarios:**

  - Revenue −15%, Cost +10%.

  - Interest +2 pts.

  - Supply disruption 30 days.

- **Outputs:**

  - DSCR / ICR risk flags.

  - Cash band chart with min breach line.

  - "Your business remains cash-positive in 84% of simulations."

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6. Export & Sharing

Icons: 📤 🧾

- **One-Page PDF Report:**

  - Cover (Scenario Name, Date, Business ID).

  - KPI summary with color statuses.

  - Key charts (waterfall, cash curve, outlook).

  - Advisor narrative + actions + risks + peer insights.

  - Provenance badge footer (showing sources and confidence).

- **CSV Export:** base and scenario series for each metric.

- **"Share with Advisor"** button to generate secure link.

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7. Provenance & Confidence Display

Icons: 🧭 ✅

- Each block shows small metadata tag:

    - `provenance.baseline_source = "quickbooks"`

    - `used_priors = true (0.4 weight)`

    - Confidence % badge (top-right corner).

- Tooltip: "Data from QuickBooks with 40% peer assistance via Pinecone."

User Experience Flow

1. Owner asks a plain question ("Can I afford a tractor?").

2. Chatbot asks follow-ups until it has numbers.

3. AI runs `POST /api/ai/scenarios/full`.

4. Results render as Base vs Scenario cards + charts.

5. Advisor summarizes impact, actions, risks.

6. User can export PDF or run stress tests.

UX Design Rules

- Visual-first (large numbers, color bands).

- Educational tooltips under every term.

- Plain-English explanations: no jargon.

- Null values show "— missing data" + reason.

- Green = Healthy 🟢 | Yellow = Watch 🟡 | Red = At Risk 🔴.

- Light shimmer loading states (no spinners).

- Export button always visible top-right.

Example Conversation

User: "Can I afford a $200k tractor?"
AI: "Let's see — will you finance it or pay cash?"
User: "Finance, 20% down, 5-year loan at 6%."
AI: "Got it. That's $40k down + $3,866/mo. Any maintenance costs?"
User: "About $2.5k per year."
AI: "Running simulation… ✅ Feasible: ROI 17%, IRR 12%, payback 4.1 yrs. Cash dips $38k then recovers Q3. Fuel savings ≈ $4.2k / yr. Runway remains 6 months."
AI: "Risks: loan coverage tight first year (DSCR 1.25). Peers typically see 15–18% ROI on similar equipment."
User: "Export report."
AI: "Done — saved to PDF with charts and advisor summary."

In Short

Scenario Planning Lab = Ask anything → simulate → see real impact.
It's your conversational **CFO + strategist + industry mentor**, powered by real QuickBooks data, AI forecasting, and peer benchmarks.
Owners simply type questions; LightSignal handles the math, modeling, visuals, and advice

Tab: Business Insights

KPIs:

(Displayed as summary cards across the top — showing where the business stands overall)

Icon	KPI	Description	Benchmark / Guidance
💡	**Top Performing Area**	The strongest area of the business right now (e.g., "Service Revenue +12% MoM").	"Top quartile vs peers."
⚠️	**Weakest Area / Risk Signal**	Underperforming area or metric showing decline (e.g., "AR Aging +10 days").	"Below median performance."
💵	**Profitability Driver**	Biggest factor improving or hurting profits.	"Labor utilization driving +2.4 pts margin."
📊	**Efficiency Score**	Weighted index combining expense control, margins, and revenue per employee.	"Your score: 73 (peer median: 65)."
🧭	**Growth Opportunity Index**	AI-generated rating of emerging opportunities or strategies.	🟢 80–100 = strong; 🟡 60–79 = fair; 🔴 <60 = weak.

Sections:

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1. Current Business Pulse

Icons: 📈 🧩

- **Performance Summary:**

  - "Revenue up 6% MoM but cost of goods increased 8%, tightening margins."

- ○ "Cash flow healthy, though AR collection slowing."

- ○ "Payroll costs stable; marketing ROI improving."

- **Quick Snapshot Cards:**

  - ○ Top 3 **Strengths** (🟢) — "Repeat customer sales," "Low fixed cost ratio," "High utilization."

  - ○ Top 3 **Weaknesses** (🔴) — "Rising vendor costs," "Slow collections," "High churn."

- **Performance Heatmap:**

  - ○ Rows = departments or functions.

  - ○ Columns = KPIs (Revenue Growth, Margin %, Cost Efficiency, AR Days).

  - ○ Color-coded: 🟢 outperforming | 🟡 stable | 🔴 underperforming.

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2. AI Data Analysis (Internal Performance)

Icons: 🤖 📈

- Automatically analyzes key performance areas using QuickBooks + historical data.

- **Insights surfaced:**

  - ○ Profitability Trends — "Gross margins declined from 41% → 37% last quarter."

  - ○ Expense Outliers — "Software costs grew 24% with no revenue lift."

  - ○ Cash Health — "You maintain ~4.8 months runway, slightly above peer average."

  - ○ Labor Productivity — "Revenue per employee up 9%, driven by better utilization."

- **Visualization:**

  - ○ Trendline graphs for key ratios (Margin %, Expense %, Revenue).

  - ○ Highlighted deltas vs previous quarter.

- **Educational Tooltips (🧠):**

  - "Gross Margin = (Revenue – COGS) ÷ Revenue — measures production efficiency."

  - "Runway = Cash ÷ Burn Rate — how long you can operate without new funding."

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3. Peer & Market Intelligence

Icons: 👥 🌍

- **Benchmark Comparison:**

  - Pulls peer data via `/api/ai/benchmarks/compare`.

  - "Your revenue per employee = $128k vs $115k peer median."

  - "Peers in similar industries have reduced DSO from 42 → 36 days."

- **Competitive Landscape:**

  - Agents summarize what's working for other businesses in your space.

  - Examples:

    - "Peers improved retention 8% using loyalty programs."

    - "Top-quartile firms trimmed COGS 6% by renegotiating vendor terms."

    - "Companies in your cohort shifted marketing spend to local digital, ROI +1.6×."

- **Data Provenance Badges:**

  - QuickBooks Cohort

  - SBA / Census / Public Filing Sources

  - Pinecone Peer Vector Comparisons

  - Confidence Score displayed for each insight.

4. Strategic & Tactical Recommendations

Icons: 🧭 ⚙️

- Each insight automatically generates **action cards** divided by impact area:

  - **Revenue Growth Actions:**

    - "Raise prices by 3% — expected +1.8 pts margin; low churn risk."

    - "Launch service maintenance package — peers report 9% recurring uplift."

  - **Cost Efficiency Actions:**

    - "Renegotiate supplier contracts — typical savings 5–10%."

    - "Automate payroll scheduling — reduces overtime by 7%."

  - **Cash & Liquidity Actions:**

    - "Shorten payment terms from 45 → 35 days — +$14k avg monthly cash."

    - "Delay equipment purchases to preserve liquidity."

  - **Operational Actions:**

    - "Cross-train staff for seasonal demand — improves labor utilization."

- Each recommendation includes:

  - **Expected Impact ($ / %)**

  - **Confidence Level** (High / Medium / Low)

  - **Peer Validation Example**

  - **Implementation Timeframe** (Short / Medium / Long)

  - **'Run in Scenario Lab'** button → auto-loads lever inputs there.

5. Efficiency & ROI Focus

Icons: ⚙️ 💰

- **Efficiency Dashboard:**

  - Visual ratio cards for:

    - Revenue per Employee

    - Expense Ratio (Expenses ÷ Revenue)

    - Labor Utilization %

    - ROI by Initiative

- **ROI Insights:**

  - "Marketing ROI = 4.3x (peer median = 3.5x)."

  - "Operations software ROI declining; 0.9x → underperforming threshold."

- **AI Summary:**

  - "Your most efficient spend: customer retention programs."

  - "Your least efficient: software subscriptions (low ROI)."

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6. Growth & Opportunity Detection

Icons: 🚀 🔍

- **AI Opportunity Mapping:**

  - Detects potential revenue levers or untapped channels:

    - "Customer base concentrated in 2 zip codes — expansion potential nearby."

    - "Adding recurring contracts could increase revenue 12% annually."

- ○ Links each opportunity to peer outcomes for credibility.

- **Opportunity Scoring Model:**

  - ○ 0–100 based on:

    - ■ Market Size

    - ■ Peer Adoption Success

    - ■ Required Capital

    - ■ Estimated ROI

  - ○ Sorted into **Low / Medium / High Priority** with confidence badge.

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7. Visual Insight Reports

Icons: 📊 🧾

- **Charts and Grids:**

  - ○ Profit Driver Breakdown (Revenue vs Expense vs Profit impact).

  - ○ Peer Comparison Radar Chart (Margins, Growth, Liquidity).

  - ○ Opportunity Matrix (Impact vs Difficulty).

  - ○ Efficiency Trendline (rolling 12-month view).

- **Color Indicators:**

  - ○ 🟢 Above peer average

  - ○ 🟡 Near average

  - ○ 🔴 Below average

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8. Export & Sharing

Icons: 📤 🗂️

- **Insight Export:**

    - One-page PDF or slide-style export with:

        - Key Insights

        - Recommendations

        - Peer Examples

        - Provenance & Confidence footnotes.

- **Weekly Digest Option:**

    - Email summary: "Top 3 Insights + Top 3 Recommended Actions."

- **Send to Scenario Lab:**

    - Direct action button beside each insight:

        - "Simulate this recommendation in Scenario Planning Lab."

UX Flow Summary

1. The system continuously analyzes **live financial + peer data**.

2. Results surface here as **insight cards, benchmarks, and recommendations**.

3. The user reads what's working, what's not, and what others are doing successfully.

4. If they want to test or implement something, they jump to **Scenario Planning Lab** to simulate the result.

5. No chatbot here — just clean, curated AI analysis and recommendations.

Example User Flow

User opens Business Insights.
The page loads 5 key highlights:

- "Labor efficiency up 11% vs peers."

- "Marketing ROI falling since Q2."

- "Cash flow stable, but AP cycle long (45 days)."

- "Peers improved DSO by adopting auto-pay billing."

- "New product bundles driving 9% recurring uplift in your sector."

AI Recommendations:

- "Automate invoicing → +$13k monthly liquidity."

- "Test bundled service pricing → +6% revenue potential."

- "Reduce AP terms to 35 days → improve CCC by 9 days."
  Each has buttons: [Run in Scenario Lab] | [Add to Action Plan] | [Export PDF].

In Short

Business Insights = The Analyst and Advisor Tab.
It distills **your business performance**, compares it against **your peers**, and recommends **specific, data-backed actions**.
No chat, no clutter — just clear analytics, intelligent comparisons, and ready-to-run improvement ideas that seamlessly connect into the **Scenario Planning Lab**.

Tab: Opportunities

KPIs:

(Summary cards across the top — real-time insight into your growth pipeline)

Icon	KPI	Description	Guidance
🧭	**Active Opportunities**	Count of currently open and relevant opportunities.	"8 new matches this week."
💰	**Potential Revenue Value**	Total potential value of identified contracts, grants, and events.	"$560,000 available potential."
🧩	**Fit Score (Avg)**	How well current opportunities align with your business type, capacity, and region.	🟢 80–100 = strong match; 🟡 60–79 = moderate; 🔴 <60 = low.
🌦️	**Event Readiness Index**	Combines weather forecast, staffing availability, and financial readiness for outdoor events.	"88% — optimal conditions this week."
📈	**Historical ROI on Opportunities**	ROI of past bids, events, or programs engaged.	"Avg ROI = 2.9× across 12 past events."

Sections:

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1. Opportunity Chatbot — "AI Scout"

Icons: 🤖 💬

A conversational assistant dedicated to finding, filtering, and evaluating opportunities for your business.

User Experience:

- Always available in the bottom-right corner of the tab.

- Handles natural language requests like:

  - "Find government contracts I can bid on this month."

  - "Show food festivals nearby with good foot traffic."

  - "Are there any vendor openings at construction expos next quarter?"

  - "Is weather good for outdoor events this weekend?"

  - "Compare last year's ROI on local trade shows vs statewide."

Capabilities:

- **Search Agent Integration:**

  - Calls LightSignal's **Opportunity Agent API** to retrieve curated results.

  - Uses Opportunity Profile filters to personalize queries automatically.

- **Conversational Filtering:**

  - Follows up: "Do you prefer local or statewide events?"

  - "What's your target spend range?"

- **Data Integration:**

  - Pulls event and contract data from verified government, B2B, and regional databases.

  - Fetches weather forecasts and seasonal data for outdoor events.

- **Output Examples:**

  - "Found 3 government bids closing within 10 days — two HVAC, one electrical."

  - "The Tampa Outdoor Market on Nov 3 expects 7,000 attendees — 15% rain chance, ROI 2.2× last year."

  - "The average cost to participate is $400; peers earned $3.1k in sales."

Voice / Tone:

- Friendly and proactive — like a business development manager:
  "I found a few opportunities that look like perfect fits — want me to show ROI projections?"

---

2. Opportunity Profile Setup

Icons: 🧾 ⚙️

- Defines preferences for what kinds of opportunities to surface.

- Feeds the AI Scout's personalized search logic.

Profile Fields:

- **Business Type:** auto-filled (e.g., "HVAC Service," "Food Truck," "Construction Contractor").

- **Operating Region:** City, state, or radius-based (e.g., 50 miles).

- **Preferred Opportunity Types:**

  - 🏛️ Government Contracts / RFPs

  - 💵 Grants / Funding Programs

  - 🎪 Trade Shows / Industry Expos

  - 🍔 Local Events / Pop-ups / Festivals

  - 🤝 Partnerships & Supplier Programs

  - 💼 Vendor or Subcontractor Listings

  - 🎓 Certifications & Training Programs

- **Filters:**

  - Budget limits

- - - Travel range

  - Staffing / capacity toggles

  - Risk appetite ("Only show low-cost, high-ROI opportunities").

Auto-Sync:

- Pulls from the main business profile and financial data to match capacity with feasibility.

- Updates weekly based on activity history ("You've recently joined 3 local events — would you like more like these?").

---

3. Curated Opportunity Feed

Icons: 🔍 📫

- AI Scout populates a live, scrollable feed of opportunities tailored to the business profile.

- Each card contains a **snapshot** of key information:

  - Title, Source, and Category (e.g., RFP / Event / Grant).

  - Deadline or Event Date.

  - Estimated Revenue / Cost.

  - Fit Score & Confidence Level.

  - Peer Outcome Summary (ROI, past participants, etc.).

  - 🌦️ Weather Indicator (for outdoor or travel-dependent events).

  - "View Details," "Save to Watchlist," and "Simulate in Scenario Lab" buttons.

Examples:

- "City HVAC Maintenance Bid — $180k value, closes in 9 days, Fit Score 91."

- "Downtown Music & Food Fest — booth $250, 8,000 attendees expected, 10% rain risk, ROI last year: 2.4×."

- "State Small Business Grant — up to $20k reimbursement, due in 30 days."

---

4. Opportunity Detail View

Icons: 📋 💡

When expanded, each card shows a deep-dive breakdown:

- **Summary:**

    - Description, source, date, and goal.

    - "Annual vendor contract for city buildings, 2-year term."

- **Financial Analysis:**

    - Participation costs, potential revenue, and ROI estimates.

    - "Total cost $2,300; potential gross profit $4,800; ROI = 2.1×."

- **Peer Performance Data:**

    - "5 similar businesses participated last year — 3 profitable, avg margin 19%."

- **Weather Forecast (🌦 Outdoor Only):**

    - "72°F, 10% rain, 8 mph wind. High attendance probability."

    - Tooltip: "Events held under similar conditions had 13% higher sales."

- **AI Commentary:**

    - "This event aligns strongly with your audience (Food & Retail). Peer ROI 2.4×."

    - "Attendance forecast is positive; no major competing events nearby."

- **Attachments & Links:**

- ○ Registration or RFP links, downloadable documents.

---

5. Watchlist & Tracking

Icons: 📅 ⏳

- **Saved Opportunities Table:**

  - ○ Lists opportunities saved or in progress with status, deadlines, and expected ROI.

- **Statuses:** Open | Applied | Attended | Won | Lost | Closed.

- **AI Tracking Insights:**

  - ○ "3 saved events are closing in under 10 days."

  - ○ "Your success rate in local events is 62%."

- **Reminders:**

  - ○ Automatic deadline and event reminders (email or in-app).

  - ○ Calendar integration (Google, Outlook).

---

6. Cost & ROI Insights

Icons: 💵 📊

- Summarizes overall opportunity engagement metrics.

- "Average ROI by Category:"

  - ○ Government Contracts → 3.2×

  - ○ Local Events → 1.9×

  - ○ Partnerships → 2.6×

- "Most profitable activity type for your business: recurring local events."

- Peer comparison:

  - "You outperform peers by +0.4× average ROI on food festivals."

- **AI Commentary:**

  - "Your business does best in weekend events with <10% rain risk."

  - "Low success rate in federal contracts; focus on city and state RFPs instead."

---

7. Local & Industry Event Explorer

Icons: 🎪 📍 🌦️

- Shows nearby expos, pop-ups, markets, and conferences relevant to your sector.

- **Weather-Aware Feeds:**

  - Adjusts recommendations based on forecast ("Events postponed due to storm risk").

  - Displays weather badge with forecast and "attendance impact score."

- **Event Fit Score:**

  - Calculated using industry, audience type, travel distance, and forecasted attendance.

- **Peer Data:**

  - "Businesses like yours earned avg $2.9k per event."

- **Optional Filter:** "Only show events with indoor venues or good weather forecasts."

---

8. Government Contracts, Grants & Programs

Icons: 🏛️ 📜 💼

- Auto-fetches current government RFPs, procurement postings, and grant programs.

- Includes filters for location, industry, and certification eligibility.

- **Details include:**

  - Contract Size / Term / Competition Level.

  - Historical Awards (names, bid amounts).

  - Peer Win Rate (% of similar companies who succeeded).

  - "Confidence: 87% match to your service profile."

- **AI Help:**

  - Suggests which bids are realistic based on financial and staffing data.

  - "Your cash flow supports bids under $250k; avoid multi-year obligations for now."

---

9. AI Forecast & Seasonal Planning

Icons: 📅 🌍

- Cross-references local weather and industry calendars to identify best windows for business opportunities.

  - "Your area's busiest event months are April–June and Sept–Oct."

  - "Winter contracts skew toward maintenance and government projects."

- Displays "Event Climate Outlook" card with seasonal patterns:

  - "Avg attendance rises 18% in spring events."

  - "Outdoor risk index drops below 30% after September."

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10. Performance Analytics & Learning

Icons: 📈 🧠

- Tracks how pursued opportunities performed financially.

- Updates the AI Scout's recommendation logic automatically:

    - "High ROI in community festivals; increase focus on similar listings."

    - "Poor ROI on high travel-cost events — reducing long-distance listings."

- Generates quarterly **Opportunity Performance Reports:**

    - Wins / Losses / Attendance / Cost / Profit / ROI per category.

---

11. Export & Collaboration

Icons: 📤 🧾 🤝

- Export "Opportunity Portfolio" as PDF or CSV.

- Include: Fit Scores, ROI estimates, costs, deadlines, and confidence.

- **Collaboration Tools:**

    - Assign to team member ("Marketing," "Ops," "Sales").

    - Comment thread per opportunity.

    - Shared watchlist with status updates.

UX Flow Summary

1. User sets up **Opportunity Profile** (preferences, types, radius, and filters).

2. The **AI Scout Chatbot** runs agentic searches in the background — surfacing tailored cards.

3. The user interacts with the chatbot to refine or explore ("Show me weekend events only," "Filter to government contracts under $200k").

4. Weather integration provides **real-time event feasibility analysis.**

5. Each opportunity includes peer performance, cost-benefit breakdown, and links to simulate in **Scenario Lab**.

6. Past performance feeds into the learning model, continually refining future recommendations.

Example User Flow

User: "Find events near me next weekend for my food truck."
 AI Scout: "3 events found. The Clearwater Food Festival (Sat) expects 6,200 visitors, 8% rain chance, and avg vendor profit $3.4k. Booth fee $250."
 User: "Add to my watchlist and check if any peers attended."
 AI Scout: "2 local vendors did last year — ROI 2.7×. Added to your list. Weather looks ideal (75°F, 10% rain)."
 User: "Simulate in Scenario Lab."
 AI Scout: "Running cost-benefit… ✅ Estimated +$2,800 profit after costs."

In Short

Opportunities = The AI Scout, Analyst, and Weather Advisor for Growth.
 It curates **contracts, events, grants, and partnerships** specifically for your business — blending **financial fit, peer history, and weather intelligence.**
 You can **chat to find, refine, and evaluate** opportunities, then **simulate their impact** or **track results** — all from one dynamic command center.

Tab 5: Payroll & Hiring

Purpose: Track payroll, forecast hiring costs, and analyze affordability.
 KPIs: Payroll total, headcount, cost per employee, hiring runway.
 Assistant Behavior: "Can you afford to hire?" projections + ROI per headcount.

Tab 6: Settings / Data Connections

Purpose: Manage integrations, demo/live toggle, and API connections.
Assistant Behavior: Troubleshoot connections, explain data provenance.

Tab: Demand Forecasting

KPIs:

(Displayed as top-level cards showing projected demand trends and health)

Icon	KPI	Description	Benchmark / Guidance
📈	**Forecasted Demand (Next 30 Days)**	AI-predicted sales volume or client demand for upcoming month.	"+12% vs last month (high confidence)."
📅	**Event Impact Index**	Measures effect of upcoming events, holidays, or weather on demand.	"89 — strong positive impact expected."
🌦️	**Weather Influence Score**	Quantifies how local weather is projected to affect business activity.	"75 — mild positive (sunny weekend)."
🎄	**Seasonality Effect**	Detects recurring seasonal patterns in demand.	"Holiday boost: +24% over baseline."
⚠️	**Demand Risk Level**	Flags volatility or uncertainty in predictions.	🟢 Stable (<10% variance), 🟡 Moderate, 🔴 Volatile (>25%).

Sections:

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1. AI Demand Chatbot — "Forecast Analyst"

Icons: 🤖 💬

Your intelligent forecasting companion — explains demand projections, external influences, and "what-if" effects in plain English.

User Interactions:

- Natural language queries like:

    - "How will this weekend's storm affect my sales?"

    - "What's my expected revenue during the Super Bowl weekend?"

    - "Will the county fair increase traffic near my store?"

    - "Should I bring more staff next Saturday?"

    - "How much will foot traffic increase during spring break?"

Capabilities:

- Integrates with your **local event data**, **weather APIs**, and **QuickBooks sales history**.

- Cross-references seasonal patterns and peer benchmarks.

- Explains reasoning in context:

    - "Sales are projected to rise 18% next weekend because the Clearwater Food Festival attracts 7,000 visitors, and weather forecasts are clear."

    - "Expect a dip of 9% mid-week due to forecasted storms and school closures."

Tone:
Friendly and educational — like a seasoned operations advisor:

"You're likely to see double your usual demand this Friday — want me to show which products or services typically spike most during these events?"

---

2. Demand Overview Dashboard

Icons: 📊 🧩

- **Forecast Timeline:**

  ○ 3 / 6 / 12-month rolling forecast with confidence intervals (p5/p50/p95).

  ○ Visual chart with event and weather markers overlayed (📍).

  ○ Hover tooltips show contributing factors (e.g., "Local parade," "Rainy weekend," "Holiday uptick").

- **Heatmap Calendar:**

  ○ Shows daily/weekly demand intensity by color (dark green = high demand).

  ○ Overlaid with event and weather icons for context.

- **AI Summary Text:**

  ○ "Next 4 weeks show steady demand growth (+7%), boosted by local festivals and pre-holiday spending. Slight slowdown expected mid-month due to rain and school closures."

---

3. Local Events & External Factors

Icons: 🎪 📍 🌦️

- **Auto-Detected Events:**

  ○ Agent searches for relevant nearby events that historically influence demand.

  ○ "Downtown Market, Farmers Fair, Construction Expo, Sports Games, Holidays, Local Festivals."

  ○ Includes predicted traffic increase, historical attendance, and spending impact.

- ○ Example: "Last year's 'Home & Garden Expo' boosted weekend demand +22%."

- **Weather Intelligence:**

  - ○ Pulls 14-day forecasts (temperature, precipitation, wind, severe alerts).

  - ○ Adjusts demand models dynamically:

    - ■ ☀️ "Clear skies forecasted — outdoor traffic +11%."

    - ■ 🌧️ "Heavy rain expected — food truck demand down 18%."

    - ■ ❄️ "Cold front — likely increase in indoor service bookings."

  - ○ AI combines weather + event effects into a **Demand Impact Index.**

- **Holiday & Seasonal Effects:**

  - ○ National and local holidays automatically detected.

  - ○ AI commentary:

    - ■ "Labor Day weekend typically yields 35% higher sales for restaurants."

    - ■ "Expect 20% lower demand during early January (post-holiday dip)."

---

4. Event & Opportunity Integration

Icons: 🔗 🧭

- Seamlessly connects with the **Opportunities Tab:**

  - ○ Any saved event or expo auto-imports into the demand forecast.

  - ○ "You're attending Clearwater Food Fest — expected +$2.8k incremental sales."

- AI adjusts future forecasts based on events you plan to attend.

- Event overlays display ROI potential and staffing needs.

---

5. Product & Service-Level Forecasting

Icons: 🧾 💡

- Forecasts by product category, service line, or revenue stream.

- Example:

  - Food Truck — "Top sellers: tacos (+15%), drinks (+8%), desserts (flat)."

  - HVAC Business — "Service calls +12% next month; installations -4%."

- AI identifies substitution trends:

  - "As temperature rises, A/C maintenance requests spike while heating repairs drop."

- Confidence badges: "High accuracy (based on 24 months of data)."

---

6. Peer & Industry Trends

Icons: 👥 🌍

- Benchmarks your demand pattern against similar businesses in your region (via Pinecone / peer data).

- Displays:

  - "Peer average growth: +5%, Your forecast: +9%."

  - "Peers report 20% sales increases during similar events."

- AI Commentary:

  - "Your forecast exceeds peers — good positioning. Keep staffing steady."

  - "Peer slowdown detected post-holiday — adjust inventory to avoid overstock."

---

7. Scenario Impact Simulator

Icons: ⚙️ 🧮

- Optional mini-simulator for "what-if" scenarios (non-chat).

- Inputs:

  - Add hypothetical events, promotions, or weather changes.

  - "If we add 2 food festivals and run a 10% discount, what happens to demand?"

- Outputs:

  - "Projected +14% revenue growth, but margin compression of −3.2 pts."

  - "Cash flow stable; increase staffing by 1.5 FTE recommended."

- Direct link → "Run Full Simulation in Scenario Planning Lab."

---

8. Alerts & Recommendations

Icons: ⚠️ 💬

- **AI-Generated Insights:**

  - "Next week's rain may lower revenue 8% — consider offering delivery."

  - "Sports weekend expected to increase foot traffic near stadium — boost inventory."

  - "Holiday rush starting — cash reserves sufficient for projected staffing."

- **Risk Alerts:**

  - "Unseasonable weather trend — high uncertainty in 10-day window."

  - "Peer demand volatility detected — monitor competition."

- **Action Buttons:**

  - "Adjust Forecast," "View Peer Data," "Run Simulation."

9. Weather & Geographic Intelligence

Icons: 🌍 📡

- Embedded map showing local forecast + event hotspots.

- Layers:

  - Demand intensity by region (heat overlay).

  - Upcoming events, road closures, and severe weather alerts.

  - Tooltips: "Area foot traffic expected +12% due to parade route."

- Integrated with Google Maps / local data feeds for visualization.

10. Export & Collaboration

Icons: 📤 🧾 🤝

- Export "Demand Forecast Report" (PDF):

  - Forecast charts

  - Event/Weather calendar

  - Risk and Confidence indicators

  - Action recommendations

- Export by segment (Product, Location, or Timeframe).

- Share reports with teammates or advisors.

UX Flow Summary

1. **AI Agent scans external data** (events, weather, holidays, peer trends).

2. **User sees predictive dashboards** — upcoming demand with causes explained visually.

3. **Chatbot** handles any question about *why* demand changes or *how* to respond.

4. **Events from the Opportunities Tab** automatically influence the forecast.

5. **User can simulate impacts** or export reports to share or plan inventory, staffing, or marketing.

Example User Flow

User: "How will this weekend's rain affect my food truck sales?"
 AI Forecast Analyst: "Based on similar weather events, expect sales down ~14%. Consider attending the covered Clearwater Market instead (ROI 2.1× last year)."

User: "What about Thanksgiving week?"
 AI: "Historically, sales rise 28% due to increased catering and takeout. Add 2 extra staff for prep days."

User: "Any big events nearby next month?"
 AI: "Yes — 3 major expos within 10 miles. The HVAC Summit usually boosts service demand +18% in your industry."

In Short

Demand Forecasting = The Market Radar and Forecast Advisor of LightSignal.
 It blends **real financial data**, **local context**, and **AI reasoning** to predict demand.
 The Forecast Analyst chatbot explains fluctuations, connects weather and events to sales, and helps businesses plan smarter staffing, inventory, and marketing decisions — all grounded in live data and peer intelligence.

Tab: Asset Management

KPIs:

- **Total Assets** (by type: vehicles, equipment, property, IT, tools)

- **Book Value / Replacement Value** (current, by category)

- **Utilization Rate** (last 30/90 days; idle %)

- **Downtime (hrs) & Availability %** (MTBF/MTTR snapshot)

- **Maintenance Compliance** (% on-time services)

- **Upcoming Services** (next 30/60/90 days)

- **Warranties/Insurance Expiring** (count, next 60 days)

- **Depreciation (MTD/QTD/YTD)** and **CapEx Pipeline**

- **Health Score** (condition, faults, alerts, data freshness)

Tooltips (plain-English): *Utilization = time in use ÷ total available time. Higher is better.*
Availability = uptime ÷ total time. Aim > 95%.
MTBF = average time between failures (higher is better). MTTR = average time to repair (lower is better).

Sections:

1) Integrations & Data Sources (extensive)

Connect existing systems or import from files. If none, we spin up a **built-in Asset Hub** for you.

- **Accounting/ERP:** QuickBooks Online, QuickBooks Desktop (via connector), Xero, **Sage Intacct**, **NetSuite**, **SAP S/4HANA**, **Oracle Fusion**, **Microsoft Dynamics 365**.

- **CMMS / Maintenance: UpKeep**, **Fiix**, **MaintainX**, **Limble CMMS**, **Hippo CMMS**, **eMaint**, **Asset Panda**, **AssetTiger**, **EZOfficeInventory**, **ServiceMax**.

- **ITAM/ITSM: ServiceNow**, **Freshservice**, **Jira Service Management**, **Snipe-IT**, **Lansweeper**, **Jamf** (Apple), **Intune** (Microsoft).

- **Fleet & Telematics: Samsara**, **Geotab**, **Verizon Connect**, **Fleetio**, **Fleet Complete**, **Teletrac Navman**, **KeepTruckin/Motive**.

- **Property/Real Estate: AppFolio**, **Buildium**, **Yardi Voyager**, **RealPage**.

- **POS/IoT & Ops: Toast**, **Square**, **Clover**, **Lightspeed**, **Shopify POS**, **AWS IoT Core**, **Azure IoT Hub**, **Particle**.

- **Docs & Storage:** Google Drive, OneDrive/SharePoint, Dropbox (for titles, warranties, invoices).

- **File Imports:** CSV/XLSX templates; bulk import with column mapper.

- **Sensors/GPS:** OBD-II devices, BLE beacons, QR/RFID scans (mobile app).

Every connector shows provenance badges + sync status. Read-only by default; write-back toggles per system.

---

2) Asset Registry & Hierarchy

- **Unified catalog**: asset ID, category, make/model, serial/VIN, location, assigned owner, vendor, in-service date, status.

- **Hierarchy:** parent/child (e.g., Truck → Refrigeration Unit → Sensor), site/department groupings.

- **Media & files:** photos, purchase docs, titles, permits, MSOs, service records.

- **Check-in/out** workflow with QR/RFID; custody trail (who had it, when, where).

---

3) Health, Maintenance & Work Orders

- **Maintenance schedule types:** meter/odometer, calendar-based, condition-based (vibration/temperature), compliance-based.

- **Work orders:** auto-generated from schedules or alerts; priority, SLA, parts list, labor, cost, downtime captured.

- **Condition monitoring:** fault codes (DTCs), temperature/pressure thresholds, tire/engine hours.

- **MTBF / MTTR** cards per asset + trend lines.

- **Parts & Inventory link:** preferred parts, stock levels, reorder points.

Plain-English tooltips: *On-time maintenance prevents unexpected downtime and extends asset life.*

---

4) Valuation, Depreciation & Insurance

- **Methods:** straight-line, declining balance, units-of-production; per-asset policies.

- **Book vs Market value** with optional market data pulls for vehicles/equipment.

- **Insurance:** carrier, policy #, coverage limits, premiums, renewal dates, claims log.

- **Warranties:** coverage terms, expiration reminders, RMA contacts.

Depreciation = (Cost − Salvage) ÷ Useful life (for straight-line).

---

5) Utilization, Telemetry & Fuel/Power

- **Utilization dashboards:** engine hours, miles, cycles, run-time vs idle-time; heatmaps by site/shift.

- **Fuel/energy:** fuel logs, MPG/MPGe, idle fuel burn, charging cycles (EV), cost per hour/mile.

- **Driver/operator insights:** harsh events, overspeed, safety flags (from telematics).

Cost per hour = total operating cost ÷ active hours. Use it to price jobs correctly.

---

6) Alerts, Compliance & Risk

- **Expirations:** registrations, inspections, DOT, emissions, fire code, OSHA items.

- **Threshold alerts:** high temp, low pressure, geofence breach, overdue service, high downtime.

- **Policy packs by asset type:** vehicles, property equipment, food safety (cold chain), coffee machines (descaling intervals).

---

7) Lifecycle & Replacement Planning

- **Remaining Useful Life (RUL)** estimates using age, condition, failures, and utilization.

- **Replace vs Repair** calculator (TCO vs projected repair/downtime cost; payback/NPV).

- **CapEx planner:** pipeline with budget, lead times, and vendor quotes.

  If annual repair + downtime cost > 60–70% of replacement amortized cost, consider replacing.

---

8) Vendors, Contracts & Costs

- **Vendor directory:** service providers, OEMs, contracts, response times, rates.

- **Cost rollups:** parts, labor, external service, downtime cost, total cost of ownership (TCO).

- **SLA tracking:** on-time % and mean response; vendor scorecards.

---

9) Documents, Photos & Audit Trail

- **Secure vault:** titles, deeds, permits, inspections, receipts, appraisals.

- **Smart tags:** auto-extract renewal dates from PDFs.

- **Audit logs:** who changed what/when; export-ready for auditors or insurers.

---

10) Roles, Mobile & Offline

- **Role-based views:** Owner (KPIs), Ops (work orders), Tech (mobile tasks), Finance (depreciation/CapEx).

- **Mobile app:** scan QR/RFID to view history, log service, attach photos, open/close WO—even offline.

- **Kiosk mode** for shops to clock labor and parts used.

---

11) If They Don't Have a System (Built-in Asset Hub)

- **Quick start wizard:** import from CSV or scan serials with phone camera.

- **Default policies:** suggested service intervals per asset type.

- **Simple depreciation & insurance modules** out of the box.

- **Upgrade path:** later connect to CMMS/fleet/property tools and backfill history.

---

12) Finance Link & Pricing Intelligence

- **Sync to accounting:** capitalization vs expense, asset GLs, monthly depreciation journal (optional write-back).

- **Job costing hooks:** attach asset hours/miles to jobs/projects to reveal true margins.

- **Pricing helper:** recommend minimum hourly/usage rates to cover asset cost + target margin.

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13) Exports & Reports

- **One-click reports:** Asset list, Upcoming Services, Expirations, Depreciation, Downtime, TCO by asset, Replace vs Repair.

- **Formats:** PDF, CSV/XLSX; scheduled email exports.

- **APIs:** REST webhooks for events (new fault, WO created, warranty expiring).

14) Data Model (core fields for developers)

```
asset_id, external_ids[], category, type, make, model, year,
serial/VIN, photo[], site, location (lat/lng), assigned_to, status,
purchase_date, in_service_date, purchase_price, salvage_value,
useful_life_months, depreciation_method, book_value,
replacement_value, warranty_provider, warranty_expiration,
insurance_policy, insurance_expiration, meter_type (hrs/mi/cycles),
meter_reading, utilization%, availability%, mtbf_hours, mttr_hours,
maintenance_plan_id, next_service_date, last_service_date,
telemetry{odometer, engine_hours, gps, fuel, dtc[]}, docs[], notes,
custom_fields{}
```

15) Quick Actions (buttons)

- **Add Asset / Bulk Import**

- **Scan QR to Log Service**

- **Create Work Order**

- **Record Meter Reading**

- **Run Replace vs Repair**

- **Export Upcoming Services**

- **Connect Integration**

Plain-English Formula Hints (inline tooltips)

- **Utilization** = time in use ÷ available time (aim high).

- **Availability** = uptime ÷ total time (aim >95%).

- **TCO** = purchase + financing + fuel/energy + parts + labor + downtime cost − resale.

- **Downtime cost** = lost revenue or rental replacement + labor inefficiency.

- **Replace vs Repair** = compare next-3-year repair+downtime vs new asset's amortized cost & productivity gains.

Tab: Inventory & Multi-Location Inventory

KPIs

Icon	KPI	Description	Ideal / Tooltip
📦	**Total SKUs / Items**	Count of active inventory lines across all sites.	"4,312 items across 3 warehouses."
🏢	**Locations Online**	# of active locations syncing correctly.	"3 / 3 connected."
⚖️	**Stock Accuracy %**	Synced vs actual physical counts.	> 97 % is strong; < 90 % = audit soon.
🔁	**Reorder Alerts**	Items below reorder point.	"72 SKUs need restock."
⏱️	**Days of Supply**	Average coverage at current sell-through.	> 30 days = safe, < 7 = critical.
💰	**Inventory Value (Book / Market)**	Valuation by FIFO/LIFO/Weighted Avg.	"$186 K on-hand."

| | Fulfillment Efficiency | Avg pick/pack/ship lead time. | "2.1 hrs avg (goal < 3 hrs)." |

Sections

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1 Integrations & Data Sources

Support for both **inventory management** and **POS/ERP** systems.

Supported APIs / Platforms

- **Accounting/ERP:** QuickBooks Online/Desktop, Xero, Sage Intacct, NetSuite, SAP Business One, Oracle Fusion, MS Dynamics 365.

- **Inventory Platforms:** TradeGecko (QB Commerce), Cin7, DEAR Systems, Katana MRP, Zoho Inventory, Unleashed, inFlow, Fishbowl, Odoo, Square for Retail, Lightspeed Retail, Shopify, WooCommerce, BigCommerce.

- **Warehouse & 3PL:** ShipBob, ShipHero, ShipStation, Flexe, Amazon FBA, Walmart Fulfillment.

- **POS / Franchise:** Toast, Clover, Revel, Vend, Square.

- **CMMS / Asset Links:** UpKeep, Fiix (for parts inventory).

- **File Imports:** CSV/XLSX templates with SKU mapper.

If the user lacks an external system, LightSignal spins up an **internal "Inventory Hub"** (see section 6).

All connectors carry provenance & sync health badges.

---

2 Inventory Overview Dashboard

Features

- Multi-location summary grid: Item → On-hand, Allocated, In Transit, Available, Committed.

- Color badges for stock status (🟢 Healthy / 🟡 Low / 🔴 Out).

- Location filter or combined totals.

- Mini map with stock-by-region visualization.

- AI summary:

  "Warehouse A overstocked in cold-brew filters (+280 units); retail B short on cups (−130). Suggest transfer."

3️⃣ Auto Replenishment & Alerts

- **Reorder points** auto-calculated via: historical demand + lead time + safety factor.

- **AI forecast** from sales trends + seasonality + events from Demand Forecasting tab.

- **Notifications:**

    - "Beans below reorder point (supply = 5 days). Order 200 units."

    - "Truck filters low at Site C — auto-PO created to preferred vendor."

- **Purchase Order linkage:** draft POs auto-filled with vendor, qty, price.

4️⃣ Multi-Location & Transfers

- **Location hierarchy:** Warehouse → Store → Truck → Kiosk.

- **Internal transfers:** create / track / approve with cost & ETA.

- **In-transit tracking:** quantity, carrier, ETA, condition via IoT tags or 3PL feed.

- **AI optimizer:** suggests transfers to balance regional demand.

Tooltip: *If two locations have uneven stock, AI recommends a transfer rather than new order to reduce holding costs.*

---

5 Inventory Detail & Valuation

- FIFO, LIFO, Weighted Average toggle.

- Lot/serial tracking, expiry dates, batch IDs.

- Cost layers with landed cost breakdown (freight, duties, storage).

- COGS reconciliation vs sales ledger.

- Shrinkage tracking & audit log.

  Shrinkage = (recorded – counted) ÷ recorded.

---

6 Built-in Inventory Hub (if no integration)

- Guided import wizard from CSV or manual entry.

- Auto-SKU ID generation and barcode/QR printing.

- Simplified purchase / sales entry.

- Built-in alerts, valuation, reorder logic.

- Upgrade path → external system sync later.

---

7 Forecasting & Demand Link

- Pulls forecasts from Demand Forecasting tab.

- Predicts stock-outs and surpluses based on event/seasonal data.

- *Example:*

- ○ "Labor Day festival projected +30 % drink sales → increase cups and napkins stock by 25 %."

- ○ "Hurricane forecast — expect delivery delays 3 days avg; raise safety stock temporarily."

---

8 Chatbot — "Inventory Advisor"

Icons: 🤖 💬

Conversational AI assistant specialized in stock, purchasing, and supply optimization.

Example Queries

- "Which items are running low this week?"

- "Do we have enough beans for the food truck festival?"

- "Show me what products move fastest in each location."

- "If the Florida storm hits, how long before Warehouse A runs out?"

- "Recommend vendors to restock filters under $100."

Capabilities

- Pulls real-time stock + forecast data.

- Integrates weather feeds and event calendar.

- Performs what-if analysis (e.g., demand +20 %).

- Creates transfer or PO drafts on approval.

- Explains concepts in plain language:

  - ○ "Safety stock = extra inventory to cover delays; you're currently below optimal by 15 %."

9️⃣ Vendor & Procurement Sync

- Vendor database with preferred SKUs, lead time, min order qty.

- Auto-recommend lowest cost vendor meeting lead time.

- Sync purchase orders and receipts from QuickBooks, Xero, SAP, NetSuite, Odoo.

- AI summary: "Vendor A on-time 98 %, Vendor B cheaper but slower (4 days avg)."

🔟 Analytics & Reports

- **KPIs over time:** turnover, fill rate, stock accuracy, aging.

- **Heatmaps:** inventory by location, SKU value vs velocity.

- **Slow / Obsolete Stock report:** AI suggests markdown or bundle.

- **Reorder History:** avg lead time and stock-out frequency.

- **Multi-location profitability:** inventory holding cost per site.

🔢 Finance Integration

- Push COGS, adjustments, and asset capitalizations to accounting.

- Sync revenue by SKU to match inventory consumption.

- Reconcile variance → audit trail for loss prevention.

📱 Mobile & IoT

- Barcode / QR scanner app for counting and transfers.

- BLE / RFID tag support for auto stock reads.

- Offline counting mode with auto sync when online.

🧠 Formulas & Tooltips

- **Reorder Point** = (Avg daily usage × Lead time) + Safety stock.

- **Turnover Ratio** = COGS ÷ Avg Inventory Value.

- **Days of Supply** = Inventory ÷ Avg daily usage.

- **Fill Rate** = Orders fulfilled ÷ Orders placed.

📤 Exports & Automations

- Scheduled reports to email / Drive.

- Webhooks for low-stock, PO created, transfer initiated.

- JSON / CSV exports for BI tools (Power BI, Looker, Tableau).

UX Flow Summary

1️⃣ System connects to inventory APIs or uses built-in hub.
2️⃣ Auto-sync keeps stock levels and reorder points current.
3️⃣ Chatbot answers questions and creates restock actions.
4️⃣ Demand forecasts and weather feed adjust reorder plans.
5️⃣ Multi-location dashboard visualizes all sites in real time.

Example User Flow

User: "Inventory Advisor, are we low on cold brew filters at the downtown shop?"
AI: "Yes — 12 units left (3 days of supply). Suggest ordering 80 more from Vendor A (lead time 4 days)."
User: "Place the PO and transfer 20 from Warehouse B."

AI: "Done — PO #4432 created and transfer ticket #22 issued. Weather forecast shows hot weekend → expected +15 % sales."

Tab: Success Planning & Exit Readiness

KPIs:

Icon	KPI	Description	Guidance / Tooltip
💰	**Estimated Business Value**	Real-time valuation estimate based on EBITDA multiples, comps, and financial trends.	"$1.82M est. value (↑6% MoM)."
📈	**Value Growth Rate**	Month-over-month change in valuation.	"Healthy growth = +5–10% annualized."
🧭	**Exit Readiness Score**	Composite index from financial, operational, and documentation readiness.	🟢 >80 ready to sell; 🟡 60–79 partial; 🔴 <60 early stage.
👥	**Successor Preparedness**	Readiness score for heirs or management handoff.	"Heir plan: drafted, legal docs pending."
⏱️	**Time to Marketable Exit**	Estimated months needed to reach full sale-readiness.	"8–12 months under current trajectory."
🧾	**Comparable Sale Multiple (Median)**	Industry benchmark from recent M&A / broker data.	"3.6× EBITDA for regional HVAC companies."

Sections:

---

1 Overview & Objectives

Icons: 🎯 🧭

- Personalized summary of where the business stands today and where it could go.

- Pulls in financial metrics (revenue, profit, margins, trends) from Financial Overview.

- AI-generated synopsis:

  "Your business valuation is trending upward, supported by consistent EBITDA margins and strong recurring revenue. Based on peers in your region, a sale could fetch 3.4–3.8× EBITDA within 12 months if documentation and management readiness are improved."

- **User-defined Goals:**

  - Sell within X years.

  - Pass to family or key employee.

  - Seek investors or partial buyout.

  - Franchise or expand before sale.

  - Maintain as legacy asset.

- **Editable Goal Planner:** AI tailors recommendations based on your chosen path (e.g., succession vs exit).

---

2 Business Valuation & Market Comparables

Icons: 💵 📊

- **Real-Time Valuation Engine:**

- ○ Calculates **Fair Market Value**, **Asset Value**, **Discounted Cash Flow (DCF)**, and **Multiple-Based Valuation (EBITDA/SDE)**.

- ○ Pulls from accounting integrations (QuickBooks/Xero), normalized EBITDA adjustments (owner's comp, discretionary expenses).

- ○ Allows scenario toggles (add/remove owner comp, adjust growth, adjust debt).

- **Market Comps Database (Agentic Search):**

  - ○ Pulls anonymized data from:

    - ■ **BizBuySell**, **BizQuest**, **Axial**, **IBBA**, **Peer M&A filings**, **Crunchbase (for tech)**.

    - ■ Government SBA resale databases.

  - ○ Matches NAICS, region, revenue size, margin profile.

  - ○ "Similar HVAC businesses (Florida, $1–2M revenue) sold for 3.2–3.8× EBITDA avg."

  - ○ Confidence badge on data (High/Medium/Low).

- **Valuation Factors Dashboard:**

  - ○ Revenue Growth

  - ○ EBITDA Margin

  - ○ Customer Concentration

  - ○ Recurring Revenue Ratio

  - ○ Working Capital

  - ○ Debt Levels

  - ○ Management Depth

  - ○ Brand Equity

  - ○ Documentation Readiness

- ○ Each scored & color-coded (Green / Yellow / Red).

- **Tooltip Examples:**

  - ○ "Recurring revenue adds 0.3–0.5× to valuation multiple."

  - ○ "High customer concentration (>30%) reduces multiple by up to 1×."

3️⃣ Exit Strategy Simulator

Icons: 🔮 ⚙️

Simulates various exit or transition paths and their financial/operational outcomes.

Available Scenarios:

- 💰 **Full Sale (M&A / Private Equity)**

  - ○ Simulates gross sale price, taxes, net proceeds, earn-outs, advisory fees.

- 👪 **Family Succession / Heir Transition**

  - ○ Models estate planning, gift tax implications, successor readiness, and ongoing income for owner.

- 👨‍💼 **Management Buyout / ESOP**

  - ○ Calculates required financing, equity dilution, and ROI for both sides.

- 🤝 **Strategic Merger / Partnership**

  - ○ Forecasts synergies, combined value, and integration risk.

- 🌱 **Partial Sale / Investor Buy-In**

  - ○ Models liquidity event with owner retention and post-sale growth.

- 📄 **Franchise / Licensing Expansion Before Exit**

  - ○ Adds 12–24 month growth period before exit, with expected multiple expansion.

Outputs:

- Net Proceeds ($ and %)

- Taxes & Fees

- New Ownership Breakdown

- Post-Transaction Income Streams

- Timeline to Completion

- AI narrative summary:

  "A management buyout yields $1.4M after-tax proceeds but reduces liquidity short-term. A full sale to a strategic buyer could fetch $1.9M with faster close."

- **Direct Integration:** "Send to Scenario Planning Lab" → runs financial projections for chosen exit path.

4️⃣ Readiness & Documentation Tracker

Icons: 📋 📂

Tracks tangible and intangible assets required for an exit or succession plan.

Readiness Categories:

- **Financial Readiness:**

  - Clean books, audited statements, normalized EBITDA, debt schedule.

- **Legal & Compliance:**

  - Operating agreements, contracts, IP filings, permits, non-competes.

- **Operational Readiness:**

  - Documented processes, employee handbooks, vendor SOPs.

- **Successor & Team Readiness:**

    - Training plans, management depth, heir development roadmap.

- **Brand & Market Readiness:**

    - Customer retention stats, online presence, reputation metrics.

Each category = % complete + checklist + upload area.
Example:

"Legal readiness: 70%. Missing employee agreements and IP assignments."

---

5 Exit Readiness Score

Icons: 🧭 📈

Weighted composite of readiness metrics, financial stability, and documentation.
Formula:

(Financial Health 40%) + (Documentation 20%) + (Operational Maturity 15%) + (Successor Preparedness 15%) + (Market Position 10%).

Outputs:

- Score + interpretation ("You're 72/100 — mid-stage readiness").

- Benchmark vs peers in industry.

- AI recommendation summary:

    "Raising documentation completeness to 95% could lift valuation 0.4× and reduce sale prep time by 3 months."

---

6 Peer & Market Research Panel

Icons: 🌍 👥

- Agentic research pulls live market trends affecting valuations (interest rates, M&A volumes, sector growth).

- Displays relevant transactions:

  - "3 HVAC service companies sold in your county this year — average revenue $1.6M, multiple 3.5×."

  - "Similar firms with recurring contracts sold 25% higher."

- **Valuation Heatmap:**

  - Plot by region + industry → visual "what businesses like yours sell for."

7️⃣ **Successor & Continuity Planning**

Icons: 👥 ⚙️

- Successor database: designate heirs or key employees.

- Successor readiness score (training, capability, legal readiness).

- AI checklist:

  - "Add insurance beneficiary designations."

  - "Draft buy-sell agreement."

  - "Schedule valuation update every 6 months."

- Optional simulation: projected cash flow for heir over time after transfer.

- Integration with **estate planners** or **attorneys** (API-ready via DocuSign, Clio, WealthCounsel).

8️⃣ **Milestones & Success Tracker**

Icons: 🏁 📅

- **Milestone Roadmap:**

    - Prepare Financials → Clean Up Operations → Train Successor → Improve Valuation Drivers → Market Business → Close Transaction.

- Auto-progress tracking based on uploaded docs and system data.

- "You've completed 5 of 9 readiness steps (55%). Estimated 8 months to marketable exit."

- **Visualization:** timeline bar or kanban-style checklist.

- AI nudges:

    "Next step: request formal business valuation from certified appraiser. Avg cost $2,500–$4,000."

9️⃣ Chatbot — "Success Coach"

Icons: 🤖 💬

Conversational AI guide specializing in exit, valuation, and legacy planning.

Example Queries:

- "What's my business worth today?"

- "If I sell next year, how much would I keep after taxes?"

- "What's a fair multiple for HVAC businesses in my area?"

- "How do I prepare my daughter to take over operations?"

- "What's the best time of year to sell?"

- "How can I raise my valuation before exit?"

Capabilities:

- Runs real-time valuation check using updated KPIs.

- Pulls peer transaction data + regional comparables.

- Generates plain-English exit readiness guidance.

- Suggests next milestones, checklists, and legal tasks.

- Links outputs to the **Scenario Planning Lab** for financial simulation.

🔟 **Reports, Exports & Collaboration**

Icons: 📤 🧾 🤝

- **One-Page Exit Readiness Report:**

  - Estimated Value, Readiness Score, Peer Comps, Top 3 Recommendations.

- **Detailed "Valuation Drivers" Report:**

  - Financial KPIs, qualitative factors, and multiplier analysis.

- **Export Options:** PDF, CSV, or to CRM (HubSpot, Salesforce).

- **Collaboration:**

  - Invite advisor, CPA, attorney, or heir to review with restricted access.

UX Flow Summary

1. System analyzes financial + operational data to generate valuation and readiness scores.
2. User defines their goal (sell, succession, expand, etc.).
3. AI Scout gathers comparables and market research.
4. Success Coach chatbot explains valuation, taxes, options, and action steps.
5. Milestone tracker monitors progress and success factors over time.
6. Optionally, user sends chosen scenario to **Scenario Lab** for full forecasting.

Example User Flow

User: "I might want to sell in 2 years. What's my business worth?"
 AI Success Coach: "Current estimate: $1.82M (3.5× EBITDA). Similar businesses in your region sold for 3.2–3.8×. You could reach $2.1M within 12 months by diversifying your client base and documenting processes."

User: "What do I need to do first?"
 AI: "Your documentation completeness is 68%. Prioritize cleaning books and securing employee contracts. Completing those could raise your readiness score from 70 → 84."

User: "Show me what happens if I sell 60% to my GM instead."
 AI: "Simulated partial sale yields $1.1M upfront and $120k annual income retained. Taxes lower by 18%. Would you like to export this scenario?"

In Short

Success Planning = The Legacy Architect of LightSignal.
 It blends **valuation intelligence**, **exit simulation**, and **readiness tracking** to help business owners confidently plan their next chapter — whether that's selling, passing down, or growing before exit.
 With AI-driven benchmarks, market comps, and milestone guidance, it turns "someday I'll sell" into a clear, data-backed roadmap for success.

Tab: Tax Optimization

KPIs:

Icon	KPI	Description	Guidance / Tooltip
💰	**Estimated Tax Liability (YTD)**	Current year's projected taxes based on real QuickBooks data.	"$46,230 estimated as of Q3."

🧾	**Identified Deduction Opportunities**	Count & total value of potential deductions not yet applied.	"12 new opportunities worth ~$14.2K."
📉	**Effective Tax Rate**	Tax expense ÷ net income — compared to industry peers.	"14.8% vs industry avg 19.2% (efficient)."
🏛️	**Tax Savings Potential**	Amount the business could save with optimized structure & deductions.	"$8,700/year potential."
📅	**Next Tax Milestone / Filing**	Upcoming filing or payment date.	"Q4 Estimated Payment — Jan 15."
📈	**Quarterly Tax Plan Score**	Readiness rating based on projections, set-asides, and compliance.	🟢 85 (well prepared).

Sections:

1️⃣ Tax Overview Dashboard

Icons: 📊 💼

- **Data Source:** Live QuickBooks / Xero / accounting feed.

- Auto-categorizes income, expenses, assets, payroll, and depreciation.

- AI summary:

  "Your effective tax rate is 14.8%, driven by accelerated depreciation on new vehicles and Section 179 deductions. Estimated 2025 liability: $46.2K, with $8.7K additional savings possible through retirement and R&D credits."

- **Top-Level Charts:**

    - Tax liability forecast by quarter.

    - Expense category breakdown by deductibility (% deductible vs non-deductible).

    - Comparison vs peer average effective rates.

2️⃣ Tax Optimization AI Engine

Icons: 🧠 ⚙️

Performs automated research and analysis to surface actionable savings strategies and peer-based insights.

Inputs:

- Live P&L, balance sheet, and fixed asset data.

- Industry, NAICS, region, entity type (LLC, S-Corp, C-Corp, Sole Prop).

- Payroll, owner compensation, insurance, and benefit data.

Outputs:

- **Identified Tax Opportunities** (ranked by impact):

    - "Section 179 vehicle deduction ($7,500 potential)."

    - "Home office deduction (pro-rated utility & rent: $1,200)."

    - "R&D credit eligibility (software feature design: ~$3,800 credit)."

    - "Retirement plan funding (Solo 401(k): $4,500 tax deferred)."

    - "Bonus depreciation on coffee machines: $2,000 deduction."

- **AI Confidence:** High / Medium / Low (based on IRS applicability & completeness of data).

- **Provenance Tags:** "Data verified from QuickBooks | Peer benchmarks via Pinecone."

3️⃣ Peer & Industry Benchmarking

Icons: 👥 🌍

- **Comparative Analysis:**

  - Uses Pinecone / public filings / IRS industry data to benchmark tax efficiency.

  - "Similar HVAC businesses in Florida avg 19% effective tax rate; your current rate 15%. Strong depreciation planning."

  - "Peers in food services claim avg 3% of revenue in vehicle + delivery deductions."

- **Benchmark Metrics:**

  - Effective Tax Rate

  - Deduction Rate (deductions ÷ revenue)

  - Credit Utilization (R&D, energy, etc.)

  - Entity Structure Distribution (S-Corp vs LLC vs C-Corp)

- **AI Commentary:**

  "Converting to an S-Corp could lower self-employment tax by ~$4,200 annually if owner salary adjusted to $65,000 base + distributions."

4️⃣ Deduction & Credit Finder

Icons: 🧾 🔍

- **Automated deduction discovery** from accounting + asset data:

- Vehicle usage (mileage logs, maintenance, depreciation).

- Equipment / Asset depreciation (from Asset Management tab).

- Home office allocation (sq ft × % business use).

- Utilities / phone / internet allocations.

- Insurance (general liability, health, key person).

- Payroll tax credits (ERC, FMLA).

- R&D credit estimator (product dev, software design, process improvement).

- Energy incentives (solar, EV chargers, efficient HVAC).

- Education & training credits (workshops, CE, certifications).

- Retirement contributions (SEP IRA, Solo 401k, SIMPLE, Defined Benefit).

- Charitable contributions.

- **AI Assistant Explanation:**

   "You spent $4,200 on professional education and training — potentially deductible as continuing education if linked to your trade."

- Each deduction card shows:

   - Estimated value 💵

   - IRS reference or code 📘

   - Confidence level ✅

   - Peer adoption rate 👥

   - "Send to Accountant" button 📤

5️⃣ **Quarterly Tax Planner**

Icons: 📅 🗓️

- **Projection Engine:**

  - Uses rolling P&L to project next quarter's tax obligation.

  - Factors in deferred deductions, quarterly estimated payments, and planned purchases.

  - "Next payment due Jan 15: estimated $11,600."

- **AI Optimization:**

  - "Deferring $9,000 in equipment purchases until next quarter may lower this quarter's payment by $2,300."

- **Set-Aside Calculator:**

  - Suggests how much to move to tax reserve account weekly.

  - "Save $1,150/week to fully fund Q4 taxes."

- **Scenario Toggles:**

  - Change expected revenue, expense additions, or asset purchases → see new liability.

6️⃣ Entity Structure Analysis

Icons: 🏢 🧩

- Compares entity types for tax efficiency based on income, owner draw, and payroll.

  - "As an LLC taxed as sole prop, you pay full self-employment tax on $120k. Electing S-Corp status could save ~$4,800/year."

- **Outputs:**

  - Net tax savings, compliance implications, recommended CPA discussion.

  - Links to resources or attorney/CPA referral APIs.

- **Tooltip:**

  "S-Corp election allows you to split income into reasonable salary + dividends taxed at lower rate."

---

7 Depreciation & Asset Optimization

Icons: 🏗️ 💡

- Links directly with **Asset Management Tab** for live depreciation tracking.

- Suggests strategies like:

  - Section 179 vs Bonus depreciation analysis.

  - Optimal asset replacement timing for write-offs.

  - "Replacing coffee machines in December yields additional $1,600 in deductions this year."

  - "Delay heavy vehicle purchase until next year to align with new IRS thresholds."

- **Visualization:**

  - Depreciation curve for each asset category.

  - Annual write-off timeline vs capex plan.

---

8 Priority Action Planner

Icons: ⚙️ 🪜

AI-generated, ranked list of tax priorities for next quarter or year-end.

Examples:

1. **Maximize Section 179 before December 31.**

○ "$32,000 of eligible equipment remains — full deduction this year possible."

2. **Establish Solo 401(k) by Dec 31.**

   ○ "Could defer $22,500 + $6,500 catch-up."

3. **Track Vehicle Mileage with App Integration.**

   ○ "Potential $3,100 deduction if logged accurately."

4. **Refine Entity Election by March 15 (S-Corp deadline).**

5. **Apply for R&D Credit pre-filing (avg 4–6 weeks processing).**

Each includes:

- Impact ($ potential)

- Deadline

- Difficulty (Low / Medium / High)

- "Send to Accountant" or "Add Reminder"

---

9 AI Tax Coach (Chatbot)

Icons: 🤖 💬

A conversational assistant that can explain, estimate, and advise on tax implications in plain English — while staying within informational, not advisory, scope.

Example Queries:

- "What's my current estimated tax bill?"

- "What deductions am I missing?"

- "If I buy a $60,000 truck this quarter, what's the tax impact?"

- "Should I prepay rent before year-end?"

- "How do similar businesses in my state reduce taxes?"

Responses Include:

- Data-driven analysis from QuickBooks and peer databases.

- Explanations of IRS logic and deduction rules.

- Charts showing before/after tax impact.

- Referrals to accountant review ("Discuss Section 179 with your CPA before filing.").

Provenance Example:

"This estimate uses your QuickBooks 2025 data and peer tax filings from Pinecone (medium confidence). Always confirm with a licensed tax advisor."

🔟 Reports & Collaboration

Icons: 📤 🧾 🤝

- **Tax Optimization Report:**

  - Summarizes potential savings, priority actions, estimated impact, and peer comparisons.

- **Quarterly Forecast Report:**

  - Shows projected liability, payments, and variance vs actual.

- **Exports:** PDF / CSV / Accountant Portal (secure share).

- **Collaboration:** Invite accountant or bookkeeper with permissioned view (read-only or editable).

UX Flow Summary

1️⃣ LightSignal connects to QuickBooks and assets to model tax exposure.
2️⃣ AI surfaces optimization opportunities and benchmarks vs peers.

3 The user reviews deductions, strategies, and projected outcomes.
4 AI chatbot answers "what if" questions and provides guidance.
5 Accountant collaboration finalizes and implements selected actions.
6 Quarterly updates keep the user prepared — no year-end surprises.

Example User Flow

User: "How can I reduce my Q4 taxes?"
AI Tax Coach: "Your estimated Q4 liability is $11,600. You could save ~$2,400 by purchasing the planned equipment this quarter under Section 179. Would you like to see the cash flow impact?"
User: "Yes."
AI: "After deduction, cash outlay $32k, net after-tax impact −$29.6k. Projected payback: 15 months. I'll flag this for your accountant."

User: "What's my total savings if I switch to an S-Corp?"
AI: "Estimated $4,200 annual savings based on current owner comp. Peers in your region average 16% lower SE tax burden with S-Corp status."

User: "Add that to my priority plan and export for my CPA."
AI: "Done — added to your Q4 Tax Priorities Report."

In Short

Tax Optimization = The AI Tax Strategist of LightSignal.
It transforms raw accounting data into a personalized, action-oriented tax plan — identifying deductions, structure improvements, and timing strategies.
Grounded in real peer data and IRS logic, it helps owners **minimize taxes, maximize savings, and prepare confidently with their accountant — quarter after quarter.**

Tab: Customer Reviews & Reputation Intelligence

KPIs:

Icon	KPI	Description	Ideal / Tooltip
⭐	**Average Rating (All Platforms)**	Weighted average of all ratings.	"4.6 ★ overall — strong reputation."
💬	**Review Volume (30 Days)**	Count of new reviews in last 30 days.	"42 new reviews (↑12%)."
📈	**Sentiment Score**	AI-scored customer tone (0–100).	"78 — generally positive tone."
🟩	**Positive / Neutral / Negative Split**	Share of sentiment categories.	"78% positive, 12% neutral, 10% negative."
🔁	**Response Rate**	% of reviews responded to by the business.	"63% response rate — aim >80%."
💡	**Customer Satisfaction Index (CSI)**	Combined score of rating + sentiment trends + responsiveness.	"82/100 — strong but room to improve."

Sections:

1⃣ Review Source Integrations

Icons: 🔗 🌐

Connects directly to platforms where customers already leave feedback.

Supported APIs / Feeds:

- **Google Business Profile** (Reviews & Ratings)

- **Yelp**

- **Facebook / Instagram Pages**

- **Trustpilot**

- **Shopify / WooCommerce Reviews**

- **Square / Toast / Lightspeed POS Feedback**

- **TripAdvisor / OpenTable** (restaurants/hospitality)

- **G2 / Capterra** (for SaaS or B2B services)

- **Email/Survey Imports:** CSV uploads from SurveyMonkey, Typeform, JotForm.

If no platform is connected → **LightSignal creates one**:

- Custom **Review Landing Page** (branded)

- QR codes to print or embed in receipts, menus, trucks, or invoices

- Direct upload or rating form (1–5★ + comment box + optional photo)

  Tooltip: "Don't have a review platform? We'll generate QR links that post directly to your business profile."

2️⃣ Review Dashboard Overview

Icons: 📊 ⭐

- Unified feed combining all platforms — sorted by **newest / most negative / most positive / trending keywords**.

- Filter by **platform, date range, sentiment, or location** (multi-site support).

- Quick-glance summary cards:

- - Avg. Rating (All)

  - New Reviews (30D)

  - Positive %, Negative %

  - Sentiment Change MoM

  - Most Mentioned Keywords

- AI summary text:

  "Customer sentiment is improving (↑6 pts month-over-month). Reviews highlight quick service and friendly staff, but frequent complaints about delivery delays and inconsistent product packaging."

3️⃣ AI Review Analysis Engine

Icons: 🧠 💬

Performs automated text and sentiment analysis on all customer reviews.

Capabilities:

- Sentiment detection (positive / neutral / negative).

- Keyword extraction ("service," "pricing," "speed," "quality," "staff," etc.).

- Emotion tone classification (happy, frustrated, disappointed, impressed).

- Frequency analysis → "Top 5 things customers talk about."

- Time trend analysis:

  - "Mentions of 'wait time' down 18% since last month."

  - "Mentions of 'friendliness' up 22% since new training program."

Outputs:

- **Positive Themes:** "Friendly staff," "Fast response," "Good prices."

- **Negative Themes:** "Slow delivery," "Limited stock," "Billing confusion."

- **AI Sentiment Map:** visual bubble chart by topic size × polarity.

  Tooltip: "AI reads and categorizes reviews to find hidden patterns in what customers love or dislike."

4️⃣ Review Breakdown by Location / Product

Icons: 🏢 📦

- For multi-location or multi-product businesses:

  - Separate sentiment dashboards per branch or category.

  - Compare sites:

    - "Downtown avg 4.8★, Suburb 4.3★ — customers cite slower service at Suburb."

  - For product-based businesses:

    - "Cold Brew Kit: 4.9★ (excellent). Grinder: 3.8★ (durability concerns)."

- Color-coded heatmaps showing rating strength across locations.

- Optional anonymized "peer comparison" (if similar businesses share data):

  - "Your average rating is 0.3★ higher than regional average."

5️⃣ Review Response Management

Icons: ✍️ 🔄

Centralized response center for replying to reviews across all connected platforms.

- Auto-drafts AI responses using tone-matching (friendly, professional, apologetic).

- Example:

  - **Positive Review:**

    "Thank you so much, Alex! We're thrilled you loved your coffee — see you again soon."

  - **Negative Review:**

    "We're sorry about the delay, Sarah. We've updated our delivery system to fix this — please DM us so we can make it right."

- Option: "Send for human review" or "Auto-post after approval."

- Auto-tag "resolved" reviews after reply.

---

6 Review Insights & Recommendations

Icons: 💡 🧾

AI-driven recommendations summarizing what's working well and what needs attention.

Outputs Include:

- **What's Working Well:**

  - "Customers consistently praise product quality and friendliness."

  - "Repeat customers mention value-for-money and cleanliness."

- **What Needs Attention:**

  - "Delivery speed cited 7× this month — consider staffing adjustment."

  - "3 negative mentions of billing — review checkout process."

  - "Mixed feedback on online ordering UX."

- **Action Recommendations:**

    - Operational: "Improve packaging consistency."

    - Marketing: "Feature 5-star reviews prominently on site."

    - HR/Training: "Train new hires on greeting & closing service flow."

    - Customer Experience: "Add SMS delivery updates."

Each suggestion includes:

- Confidence level (AI-backed)

- Estimated impact on rating improvement

- "Add to Task List" button → syncs with **Quick Actions / Reminders**.

7️⃣ Positive & Negative Review Panels

Icons: 🟩 🔴

- Split view: left = positive, right = negative.

- Summary metrics:

    - "Average positive rating: 4.9★"

    - "Top praise keyword: 'staff friendliness' (appears 43×)."

    - "Top complaint keyword: 'shipping delay' (appears 17×)."

- Sort/filter by recency, platform, keyword, or star level.

AI Auto-Classifications:

- **Strong Advocates** (multiple 5★ reviews)

- **At-Risk Customers** (recent negative + prior positive)

- **New Reviewers** (first-time feedback)

Tooltip: "Identifying advocates helps with referrals — recognizing at-risk customers can prevent churn."

---

8 QR & Feedback Campaign Builder

Icons: 📱 🔗

For businesses without existing review pipelines — or those wanting more control.

- **QR Code Generator:**

  - Create branded QR codes linking to review form or existing Google/Yelp listing.

  - Customize thank-you message, optional survey questions, and logo.

  - Print-ready for invoices, menus, doors, receipts, or packaging.

  - Auto-track scans and completion rate.

- **Smart Review Form (if hosted on LightSignal):**

  - Name (optional), star rating, comments, photo upload.

  - AI filters for spam or profanity.

  - Instant sync to Review Dashboard.

---

9 AI Review Chatbot — "Reputation Advisor"

Icons: 🤖 💬

Conversational agent specialized in analyzing and explaining customer sentiment, trends, and actions to take.

Example Queries:

- "Summarize what customers liked most this month."

- "What's the biggest complaint trend right now?"

- "How do our reviews compare to peers in our area?"

- "Can you show me all negative reviews mentioning delivery?"

- "Draft a polite reply to this one-star review."

Capabilities:

- Summarizes trends visually and verbally.

- Writes suggested replies for each tone type.

- Suggests targeted improvements.

- Forecasts potential rating improvement if actions are taken.

  "Improving average response time by 30% could lift your overall rating by 0.2★ within 2 months."

🔟 Reports & Exports

Icons: 📤 📋

- **Reputation Summary Report (PDF):**

  - Average rating trends, sentiment distribution, top keywords, improvement suggestions.

- **Response Performance Report:**

  - Avg time-to-reply, tone match, resolved % by platform.

- **Customer Feedback Trends CSV:**

  - Export raw reviews with sentiment scores, keywords, and categories.

- Schedule automatic monthly reports or share to stakeholders.

UX Flow Summary

1. System imports or collects reviews (via API or QR).
2. AI reads every review, scoring sentiment and tagging themes.
3. Dashboard shows rating trends, common keywords, and sentiment breakdowns.
4. Reputation Advisor chatbot explains what's working and what's not.
5. User responds, assigns tasks, or launches QR campaigns for more feedback.
6. Optional reports sent to owner or marketing team monthly.

Example User Flow

User: "How are my reviews trending lately?"
AI Reputation Advisor: "Your average rating rose to 4.7★ this month. Customers mention 'fast service' and 'friendly staff' 35% more often. Complaints about delivery time decreased from 12 to 4."

User: "Show me only negative reviews about packaging."
AI: "4 reviews in the past month. Average 3.2★. Most cite 'leaky lids' — potential supplier issue."

User: "Draft a reply for the most recent one."
AI: "Sure! 'We're sorry about the spill, Emily. We've since updated our packaging and would love to make it right — please reach out so we can replace your order.' Want to post this?"

In Short

Customer Reviews & Reputation Intelligence = The Voice of the Customer for LightSignal.
It consolidates all feedback channels, analyzes sentiment in real time, and turns reviews into actionable insight.
With AI-driven recommendations, automatic QR collection, and friendly response tools, it helps businesses strengthen trust, boost ratings, and fix issues before they become reputation risks.

Tab: Business Health

KPIs:

Icon	KPI	Description	Guidance / Tooltip
❤️	**Overall Business Health Score**	Weighted score (0–100) aggregating financial, operational, customer, and growth performance.	🟢 >80 = healthy; 🟡 60–79 = stable; 🔴 <60 = at risk.
💰	**Financial Health**	Liquidity, profitability, cash flow, and solvency strength.	"Strong — 82/100 (stable cash and solid margins)."
⚙️	**Operational Health**	Efficiency of operations, asset utilization, and inventory management.	"Moderate — 73/100 (minor delays, good uptime)."
👥	**Customer Health**	Satisfaction, retention, sentiment, and review trends.	"Positive — 88/100 (strong loyalty)."
⚠️	**Risk Exposure**	Business, financial, and compliance risks.	"Low — only 2 open alerts."
📈	**Growth Momentum**	Revenue growth rate, new client pipeline, and market potential.	"Emerging — 76/100 (steady upward trend)."
🧭	**AI Confidence Index**	AI's data reliability based on sync status and completeness.	"High (97% sync from QuickBooks + CRM)."

Sections:

---

1 Overview Dashboard

Icons: 📊 🩺

- Single-page summary of **total Business Health Score** and each **category score** in a visual quadrant layout:

    - **Financial** 💰

    - **Operational** ⚙️

    - **Customer** 👥

    - **Risk** ⚠️

    - **Growth** 📈

- AI-powered **summary box:**

    "Your business health score is 84 (strong). Top driver: healthy margins. Weakest area: inventory turnover lagging 12% behind peers."

- Trend chart: Health score over past 12 months.

- Comparison vs peer industry averages.

---

2 Financial Health

Icons: 💰 📈

- **Inputs from:** Financial Overview tab + QuickBooks.

- **Sub-metrics:**

    - Cash flow coverage

- ○ Profit margin trend

  - ○ Debt-to-equity

  - ○ Liquidity ratios

  - ○ Revenue stability

- **AI Assessment:**

  - ○ "Cash flow healthy, but profit margin slipping 3% due to higher OPEX."

  - ○ "Debt service coverage (DSCR) = 1.5× — within safe zone."

- **Recommendations:**

  - ○ "Reduce expenses in marketing by 8% to restore 25% margin."

  - ○ "Optimize pricing; current gross margin 4% below peers."

Tooltip: *Financial health represents how well your business can generate profit and sustain liquidity over time.*

---

3 Operational Health

Icons: ⚙️ 🧰

- **Inputs from:** Asset Management, Inventory, and Scenario Planning tabs.

- **Sub-metrics:**

  - ○ Utilization rate

  - ○ Downtime / Maintenance adherence

  - ○ On-time delivery %

  - ○ Inventory turnover

  - ○ Supply chain reliability

- **AI Summary:**

  "Operational uptime is 94%, with only minor equipment downtime. Inventory turns improved to 5.2×, though coffee supply lagged due to vendor delays."

- **Benchmarks:** Compares to peers in same NAICS.

- **Recommendations:**

    - "Increase reorder threshold on high-velocity SKUs."

    - "Automate maintenance scheduling to reduce downtime by 6%."

4️⃣ Customer Health

Icons: 👥 💬

- **Inputs from:** Customer Reviews & Reputation Intelligence tab.

- **Sub-metrics:**

    - Sentiment trend

    - Rating average

    - Retention rate

    - Repeat customer ratio

    - Review response rate

- **AI Summary:**

  "Customer sentiment remains very positive (4.7★ avg). Loyalty stable, but 5 repeat clients inactive for 60+ days."

- **Visuals:** Pie chart of sentiment + keyword cloud.

- **Recommendations:**

    - "Reach out to inactive repeat customers."

    - "Promote 5-star reviews in marketing."

    - "Train staff at Suburb location to close service gaps."

---

5 Risk Health

Icons: ⚠️ 🧾

- **Inputs from:** Financial, Operations, Tax, and Asset data.

- **Sub-metrics:**

    - Cash runway risk

    - Compliance deadlines (tax, permits, insurance)

    - Credit or loan covenant status

    - Equipment condition / safety alerts

    - Customer churn risk

- **AI Risk Index:**

    - "Low risk overall. 2 compliance renewals due soon (insurance & license)."

    - "High reliance on 1 client (33% revenue). Diversification recommended."

- **Visuals:** Risk heatmap and timeline tracker.

- **Recommendations:**

    - "Renew general liability insurance by Dec 15."

    - "Reduce client concentration risk below 25%."

6️⃣ Growth Health

Icons: 🚀 📊

- **Inputs from:** Financial Overview, Opportunities, Demand Forecasting, and Scenario Planning.

- **Sub-metrics:**

    - Revenue growth rate

    - Market expansion activity

    - New opportunities pipeline

    - Pricing elasticity performance

    - Marketing ROI

- **AI Insights:**

    "Revenue growth up 7% MoM. Strong opportunity in new catering contracts — +15% forecasted demand. Seasonal uptick expected next quarter."

- **Benchmarks:**

    - Peer average growth +5%.

    - Your growth +7.2%.

- **Recommendations:**

    - "Double down on profitable product lines."

    - "Evaluate hiring 1 sales rep to accelerate lead capture."

7️⃣ Business Health Alerts

Icons: 🚨 🔔

Dynamic alerts generated from real-time data changes.
 Types:

- **Financial Alerts:** "Cash flow below 1 month runway."

- **Operational Alerts:** "Service downtime exceeds SLA."

- **Customer Alerts:** "Surge in negative reviews."

- **Tax Alerts:** "Estimated payment due in 10 days."

- **Risk Alerts:** "Insurance coverage expiring soon."

- **Growth Alerts:** "Revenue trend plateau detected."

Each alert includes:

- Severity: 🟥 Critical / 🟧 Warning / 🟩 Info.

- Recommended Action.

- "Resolve" or "Mark as Acknowledged."

- Option to auto-generate scenario in Scenario Lab.

Tooltip: *Alerts use real data streams and peer benchmarks to spot early warning signs.*

8️⃣ AI Health Advisor

Icons: 🤖 💬

Conversational chatbot that serves as your **"Business Health Coach."**

Example Queries:

- "What's my overall business health this month?"

- "Why did my score drop from 82 to 76?"

- "Which category needs the most attention?"

- "How can I improve operational efficiency?"

- "Show me risk alerts related to compliance."

- "Compare my financial health to peers."

Capabilities:

- Explains drivers behind score changes.

- Prioritizes focus areas.

- Suggests next steps by impact and urgency.

- Cross-links directly to related tabs (Financial, Tax, Operations, etc.).

- Example Output:

    "Your overall score dropped to 78 due to lower cash flow and two overdue maintenance tasks. Resolving both could raise your score by +6 points."

---

9 Category Performance Heatmap

Icons: 🗺️ 📊

- Color-coded matrix showing category health and sub-metrics at a glance.

Category	Score	Status	Trend	Benchmark
Financial	82	🟢 Strong	↑	80

Operations	74	🟡 Moderate	→	78
Customer	88	🟢 Excellent	↑	84
Risk	80	🟢 Low	→	77
Growth	76	🟡 Moderate	↑	72

-
- Each cell clickable → drill-down to detail and insights.
- Optional "Scenario Preview" to simulate how improving one area affects overall score.

🔟 Recommendations & Action Plan

Icons: 🪜 💡

AI ranks improvement opportunities by **impact**, **effort**, and **urgency**.

Examples:

Priority	Action	Category	Impact	Effort	Timeline
🔥	Reduce marketing spend by 5%	Financial	+8 pts	Low	1 wk
⚙️	Service overdue equipment	Operations	+4 pts	Medium	2 wks

💬	Respond to negative reviews	Customer	+3 pts	Low	Ongoing
⚖️	Diversify top client revenue	Risk	+6 pts	High	3 mo
🚀	Launch catering promotion	Growth	+5 pts	Medium	1 mo

Each recommendation has:

- AI rationale (why it matters).

- Potential ROI estimate.

- "Send to Task Manager" or "Simulate in Scenario Lab."

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11 Reports & Exports

Icons: 📤 📋

- **Business Health Report (PDF):**

  ○ Overall health summary, category breakdowns, alerts, and recommendations.

- **Quarterly Health Trend Report:**

  ○ Score evolution, trends, and category deltas.

- **Exports:** CSV / JSON for external BI tools.

- Scheduled email reports for owners, investors, or advisors.

UX Flow Summary

1 System pulls latest financial, operational, customer, and asset data.
2 AI computes health scores for each domain + overall composite.

3 Dashboard displays color-coded performance summary.
4 Alerts flag deviations or emerging risks.
5 AI Health Coach explains causes and suggests actions.
6 Reports summarize trends and improvements over time.

Example User Flow

User: "How's my business health this month?"
AI Health Coach: "Overall score is 82, down 4 points. Financially solid, but operations dipped due to inventory backlog."

User: "What can I do to fix that?"
AI: "Automating restock triggers could raise your Operational score by +6. You can enable this under Inventory Settings."

User: "What's my biggest risk?"
AI: "You have one client making up 38% of revenue. Diversification recommended — add at least two new clients to rebalance."

In Short

Business Health = The Heartbeat Monitor of LightSignal.
It unifies every system into a single health score — analyzing financial strength, operational efficiency, customer sentiment, risk, and growth.
With AI alerts, peer benchmarks, and improvement roadmaps, it helps owners instantly see where their business thrives, where it struggles, and exactly what to do next.

Tab: Debt Management Advisor

KPIs:

Icon	KPI	Description	Tooltip / Guidance

💵	**Total Outstanding Debt**	Sum of all business loans, credit cards, and credit lines.	"$186,400 total across 4 accounts."
📅	**Monthly Debt Payments**	Combined scheduled principal + interest payments.	"$6,200/month average."
📊	**Average Interest Rate (Weighted)**	Weighted average of all active debt accounts.	"6.8% blended rate."
🧾	**Debt-to-Income Ratio (DTI)**	Total monthly debt ÷ monthly net income.	"0.42 (42%) — aim below 35%."
📉	**Debt Service Coverage Ratio (DSCR)**	Cash flow ÷ debt obligations.	"1.7× — comfortably above minimum."
💳	**Credit Utilization**	% of revolving credit currently used.	"48% utilization — fair, could improve."
🧠	**AI Optimization Potential**	Estimated savings via refinancing or payoff optimization.	"$4,900 annual savings potential."

Sections:

1️⃣ **Debt Overview Dashboard**

Icons: 📊 💰

- Unified view of all loans, credit cards, and credit lines — imported automatically via accounting or bank integrations.

- Grouped by **Type:** Term Loans, Credit Cards, Equipment Financing, SBA Loans, Lines of Credit, Vehicle/Asset Loans.

- Displays:

  - Lender name

  - Original balance / current balance

  - Rate (%)

  - Term (months remaining)

  - Monthly payment

  - Next due date

  - Auto-debit / manual

- **AI Summary Card:**

  "You have $186,400 total debt across 4 accounts. Your weighted interest rate is 6.8%, with 18 months average remaining. Payments are manageable given 1.7× coverage ratio."

- **Visuals:**

  - Donut chart: balance by lender/type.

  - Line graph: balance reduction trend.

  - Timeline of upcoming payments (Gantt view).

2️⃣ Loan & Credit Integrations

Icons: 🔗 🏛️

Connected Sources:

- **Accounting Systems:** QuickBooks, Xero, Sage Intacct, NetSuite.

- **Banking APIs:** Plaid, MX, Yodlee, Finicity.

- **Lenders / Financing:** American Express, Chase, Bank of America, Wells Fargo, Kabbage, BlueVine, Fundbox, OnDeck, Lendio, PayPal, Square Capital.

- **Equipment / Vehicle Financing:** Ford Credit, CAT Financial, GM Financial, John Deere, Ally.

- **SBA / Government:** SBA 7(a), 504 loans, EIDL (archived).

- **Manual Add Option:** simple input fields or CSV import (loan name, amount, rate, payment, due date).

Each data feed labeled with provenance: "Source: QuickBooks / Plaid / manual entry."

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3 Credit Utilization & Limits

Icons: 💳 📈

- Tracks all revolving credit lines (cards, LOCs).

- Displays:

  - Available limit

  - Balance

  - Utilization %

  - APR

  - Age of account

- **AI Commentary:**

  "Credit utilization is currently 48%, which is acceptable but not optimal. Reducing below 30% could improve business credit score by ~20 pts."

- **Recommendations:**

  - "Move $5,000 from Amex LOC to Business Advantage Credit Card for lower rate (7.2% vs 9.4%)."

  - "Consolidate short-term debt to long-term facility to ease cash flow."

Tooltip: *High utilization can affect borrowing power and interest rates — aim under 30%.*

---

4 Debt Service Analysis

Icons: 📅 📊

- Calculates **Debt Service Coverage Ratio (DSCR)**, **Debt-to-Income**, and **Amortization Schedules**.

- Shows principal vs interest breakdown per month.

- AI detects upcoming spikes in payments or balloon terms.

  "Vehicle loan balloon payment of $22,000 due in 7 months. Consider early refinance to avoid cash flow disruption."

- **Charts:**

  - Payment waterfall

  - Principal vs interest trend

  - Remaining balance timeline

Tooltip: *DSCR above 1.25 indicates comfortable coverage; below 1.0 = high risk.*

---

5 AI Debt Optimization Engine

Icons: 🧠 ⚙️

Analyzes all debts and identifies optimization strategies based on rates, terms, and creditworthiness.

Optimization Categories:

- **Refinancing Opportunities:**

    - Detects current market rates via agentic research.

    - Example:

        "Your equipment loan (9.2%) could refinance to 7.1%, saving ~$1,200 annually."

- **Debt Consolidation Analysis:**

    - Compares cost of combining multiple loans into one facility.

    - "Consolidating 3 short-term loans could save $380/month in payments."

- **Line of Credit Optimization:**

    - Compares revolving vs term debt to improve flexibility and lower cost.

    - "Move $20k credit card balance (14.5%) to credit line (9.3%)."

- **Payoff Acceleration:**

    - Snowball (lowest balance first) or Avalanche (highest rate first) scenarios.

    - "Avalanche method saves $2,400 in interest and pays off debt 4 months earlier."

- **AI Priority Ranking:**

    - Lists each option by impact, savings potential, and feasibility.

    Tooltip: *Optimization identifies the cheapest and fastest ways to eliminate debt or lower interest costs.*

6️⃣ Scenario Simulator

Icons: 🧮 📊

Interactive what-if tool for exploring different payoff or refinance strategies.

Scenarios Include:

- Adjust payment frequency (monthly → biweekly).

- Add lump-sum prepayment.

- Shift balances between accounts.

- Simulate rate drop after credit score improvement.

Outputs:

- New payoff date

- Total interest saved

- New monthly payment

- Cash flow impact

- Visual payoff timeline

Example:

"Adding $500/month toward principal pays off all debt 5 months earlier, saving $2,740 in interest."

Option → "Send to Scenario Planning Lab" for deeper simulation tied to full financial model.

7️⃣ Credit Score & Lender Readiness

Icons: 🧾 🏦

- Displays business credit score (via Experian / Dun & Bradstreet API).

- AI explanation:

  - "Score: 79/100 — moderate risk tier. Main factor: high revolving utilization."

- **Improvement Plan:**

  - Reduce utilization

  - Maintain low inquiry volume

  - Diversify credit mix

  - Ensure on-time payments

- AI estimates:

  "Improving utilization to 25% could increase credit score by ~15 points and unlock 1–2% lower rates on refinancing."

---

8 Debt Risk Analysis

Icons: ⚠️ 🧭

- Detects high-risk debt situations:

  - Negative amortization

  - Upcoming balloon payments

  - Rate resets (variable loans)

  - Overdue / late accounts

  - High leverage

- **AI Risk Summary:**

  "Your overall debt risk is low. However, one variable-rate line (6.25%) will adjust in April; rates expected +0.5% — consider refinancing."

- **Visual Heatmap:** Risk by loan type.

- **Alerts:**

  - "Upcoming balloon payment."

  - "DSCR under 1.25."

  - "Interest rate higher than market avg."

9️⃣ AI Debt Advisor Chatbot

Icons: 🤖 💬

Conversational assistant that explains, compares, and plans debt strategies.

Example Queries:

- "What's my total monthly debt payment?"

- "Which loan has the highest rate?"

- "How can I lower my interest expenses?"

- "Should I pay off my credit card or equipment loan first?"

- "How much would I save refinancing my truck loan?"

Responses:

- Visual + text explanations.

- Charts comparing payoff timelines.

- Recommended strategy (Snowball / Avalanche / Refinance).

- Links to actions ("Add to Priority List," "Simulate Scenario," "Mark Complete").

Example Dialogue:

User: "How can I reduce my debt costs?"
AI Debt Advisor: "Refinancing your equipment loan from 9.2% to 7.1% could save $1,200/year. Paying an extra $400/month toward your credit line would shorten payoff by 5 months."

🔟 Recommendations & Action Plan

Icons: 📋 💡

AI-generated ranked list of strategies to improve debt health.

Priority	Recommendation	Impact	Effort	Savings	Timeframe
🔥	Refinance Equipment Loan @ 7.1%	High	Medium	$1,200/yr	2 wks
⚙️	Pay down Amex LOC to 30% utilization	High	Low	+15 credit pts	1 mo
💬	Switch to biweekly payments	Medium	Low	$600 interest saved	3 mo
⚠️	Prepare for balloon payment	High	High	Avoids $22k shock	6 mo
📈	Open new credit line (to diversify)	Medium	Medium	Future rate benefit	3 mo

Each recommendation includes:

- Financial impact graph.

- Risk reduction rating.

- Option to "Send to Scenario Planning Lab" or "Add Reminder."

---

11 Reports & Exports

Icons: 📤 📑

- **Debt Summary Report (PDF):**

    ○ Balances, payments, interest, and payoff dates.

- **Optimization Report:**

    ○ Recommended refinances, savings, and new amortization schedules.

- **Debt Health Score:**

    ○ Summary by category: Low / Moderate / High risk.

- **Exports:** CSV, JSON, or direct sync to accountant.

- Schedule auto-updates monthly or quarterly.

UX Flow Summary

1 User connects accounting + banking systems to import debt data.
2 Dashboard displays total debt picture and health KPIs.
3 AI identifies optimization and refinance opportunities.
4 User simulates payoff strategies or refinancing in real time.
5 Debt Advisor chatbot answers "how to pay off faster" and "where to save interest."
6 Reports summarize current position and action plan for next quarter.

Example User Flow

User: "Show me my debt overview."
 AI Debt Advisor: "You have $186K total debt with 6.8% average rate. Equipment loan carries the highest cost (9.2%)."

User: "How can I save money?"
 AI: "Refinancing your equipment loan to 7.1% and switching to biweekly payments could save ~$1,800/year and shorten payoff by 4 months."

User: "Simulate paying an extra $500/month."
 AI: "You'd be debt-free 5 months sooner, saving $2,740 interest. Want to export this scenario to your CPA?"

In Short

Debt Management Advisor = The CFO's Credit Optimizer for LightSignal.
 It centralizes all business debt, monitors repayment health, compares interest rates to market benchmarks, and uses AI to suggest the smartest payoff or refinance paths.
 By merging **real data + market intelligence + financial simulation**, it turns debt from a burden into a managed, optimized tool for long-term stability and growth.

Tab: Fraud & Compliance

KPIs:

Icon	KPI	Description	Tooltip / Guidance
🧠	**Fraud Risk Score**	AI-generated score (0–100) indicating the likelihood of financial anomalies or irregularities.	🟢 0–30 = low risk; 🟡 31–70 = watch zone; 🔴 71+ = critical.
📜	**Compliance Readiness Score**	Measures how up-to-date and complete all required business, tax, and safety documentation is.	"86/100 — generally compliant, 2 pending renewals."

⚠️	**Active Alerts**	Total number of unresolved fraud or compliance flags.	"3 active alerts."
🧾	**Last System Scan**	Timestamp of the most recent data sweep across transactions, documents, and filings.	"Last scan: 2 hours ago."
💳	**Suspicious Transactions (30D)**	Count of transactions outside normal parameters.	"2 flagged for review."
🕵️	**Verified Vendors / Customers %**	Portion of business partners verified via EIN or public registration data.	"92% verified."
⏰	**Upcoming Deadlines / Expirations**	Number of licenses, permits, or filings approaching renewal.	"5 due within 30 days."

Sections:

1️⃣ Overview Dashboard

Icons: 📊 🛡️

- Unified view combining fraud, compliance, and regulatory status.

- Key panels:

  - **Fraud Risk Score & Trend** (past 12 months).

  - **Compliance Readiness Gauge.**

- ○ **Active Alerts List.**

- ○ **Next Deadlines.**

- AI-generated summary text:

  "Fraud risk remains low at 26. One flagged vendor invoice pending verification. Compliance readiness strong (86/100). 3 documents expiring this quarter."

2️⃣ Fraud Monitoring

Icons: 💳 🔍

Purpose: Identify and surface any transactions or behaviors that appear irregular, duplicated, or risky.

Data Sources:

- QuickBooks, Xero, or Sage accounting data.

- Bank transaction feeds (via Plaid, MX, Yodlee).

- Vendor and customer payment histories.

- Uploaded invoices and receipts (for verification cross-checks).

Detection Logic:

- Flags items that meet these criteria:

  - ○ Abnormal transaction amounts or frequency.

  - ○ Duplicate invoice numbers or repeated payees.

  - ○ Out-of-hours payment times.

  - ○ New or unverified vendor.

  - ○ Round-number payments.

- Unusual refund or reversal activity.

- Vendor accounts registered in high-risk countries.

Display:

Date	Vendor	Amount	Issue	Risk Level	Action
10/08/25	Global Supply Ltd	$5,230	3× usual amount	🟠 Medium	Review
10/04/25	Apex Logistics	$1,950	Duplicate invoice #5521	🔴 High	Verify
09/30/25	OfficeMart	$742	Normal range	🟢 Low	—

-
  Filter Options:
    - By date range
    - By risk level
    - By vendor/customer
- **Actions:**
    - "Mark Reviewed"
    - "Confirm Valid"
    - "Flag for Accountant"

Tooltip: *Fraud detection uses statistical and behavioral modeling — it doesn't block transactions, only highlights them for human review.*

---

③ Vendor & Customer Verification

Icons: 🧾 🏢

- Automatically checks vendors and customers against public registries and watchlists.

- **Verifications:**

    - Business registration (Secretary of State API).

    - EIN validity (IRS).

    - OFAC/Sanctions watchlists.

    - DUNS / business credit lookups.

- **Result Table:**

Name	Type	Verified	Last Checked	Notes
Apex Logistics	Vendor	✅ Active (US-OK)	Oct 08	—
Global Supply Ltd	Vendor	❌ Inactive (UK)	Oct 08	Flagged
Lily's Café	Customer	✅ Verified	Oct 08	Local business

-

- **Manual Uploads:**

    - Businesses can upload W-9s, EIN letters, or contracts to verify manually.

Tooltip: *Maintaining verified vendor and client records helps prevent fraud and compliance breaches.*

4️⃣ Compliance Management

Icons: 📋 ⚙️

Tracks and monitors all required business documents, licenses, filings, and permits.

Categories Monitored:

- **Business Licenses:** General, local, and state.

- **Permits:** Food, transport, event, or environmental.

- **Tax Filings:** Federal, state, payroll, sales, and franchise.

- **Insurance:** Liability, property, worker's comp, vehicle.

- **Safety & Inspections:** Fire code, OSHA, food safety.

- **Certifications:** Industry or training credentials (uploadable).

Display:

Document	Type	Status	Expiration	Renewal Needed	Action
City Food Permit	License	✅ Active	Dec 18, 2025	No	—
General Liability Insurance	Policy	🟡 Expiring	Nov 30, 2025	Yes	Renew
Business License	License	🔴 Expired	Sep 30, 2025	Yes	Upload Renewal

-
  Upload Options: drag-and-drop, link to Google Drive, Dropbox, or local file.

- AI extracts renewal dates, issuer, and auto-updates calendar.

---

5 Compliance Calendar

Icons: 📅 ⏰

- Interactive timeline view of all regulatory and filing deadlines.

- Color-coded urgency:

  - 🟥 = overdue

  - 🟧 = within 30 days

  - 🟩 = current / valid

- Click any item to open the document, renewal page, or upload screen.

- Supports recurring reminders for renewals and tax filings.

  Example:

  - Quarterly Sales Tax — due Jan 15

  - City Permit Renewal — due Dec 18

  - Worker's Comp Policy — renew by Nov 30

---

6 Active Alerts

Icons: 🚨 ⚠️

All open alerts appear in one consolidated feed:

Date	Category	Description	Severity	Status	Action

10/08/25	Fraud	Vendor "Global Supply Ltd" invoice 3× normal size	🔴 High	Open	Review
10/05/25	Compliance	Insurance policy expiring in 21 days	🟠 Medium	Open	Renew
10/02/25	Licensing	Business license expired	🔴 High	Open	Upload Renewal

Types of Alerts:

- **Fraud Alerts:** Transaction irregularities, duplicate invoices, refunds, or chargebacks.

- **Compliance Alerts:** Expiring or missing licenses, filings, or insurance.

- **Vendor Alerts:** Unverified, inactive, or high-risk vendors/customers.

- **Safety Alerts:** Missed inspections or expired certifications.

Actions:

- Review / Resolve / Snooze

- Link to item details

- "Upload Updated Document"

Tooltip: *All alerts persist until verified or resolved, ensuring audit accountability.*

7️⃣ Scores & Reports

Icons: 📈 📋

Fraud Risk Score

- Based on:

- - Transaction anomalies (30%)

  - Vendor verification (25%)

  - Refund & chargeback rate (20%)

  - Timing & frequency irregularities (15%)

  - Sanctions or watchlist results (10%)

- Updated automatically every 24 hours.

Compliance Readiness Score

- Based on:

  - Active / expired licenses (30%)

  - Tax filings (25%)

  - Insurance validity (20%)

  - Safety & inspections (15%)

  - Documentation completeness (10%)

Reports:

- **Fraud & Compliance Summary (PDF):** Scores, recent alerts, and upcoming renewals.

- **Detailed Audit Report (CSV):** Every flagged transaction and document status.

- **Compliance Calendar Export:** .ICS file for Outlook or Google Calendar.

- **Monthly Digest Email:** Score trend + unresolved issues.

8️⃣ **Integrations**

Icons: 🔗 📄

Supports importing and syncing data from:

- **Accounting & Banking:** QuickBooks, Xero, Sage, Plaid, MX.

- **Vendor Verification:** Dun & Bradstreet, IRS EIN, Secretary of State APIs.

- **Tax & Compliance APIs:** Avalara, TaxJar, ZenBusiness, MyGov.

- **Storage:** Google Drive, Dropbox, OneDrive (for documents).

- **Insurance APIs (optional):** Next, Hiscox, State Farm Business for coverage sync.

UX Flow Summary

1. System imports accounting, banking, and document data.
2. AI scans transactions for anomalies and compliance items for expirations.
3. Fraud Risk Score and Compliance Readiness update automatically.
4. Suspicious transactions and expiring documents appear in **Active Alerts.**
5. Business owners can review or upload documents directly to resolve issues.
6. Reports summarize findings weekly or monthly.

Example User Flow

User logs in → Fraud & Compliance Tab:

- Fraud Risk: 24/100 (Low)

- Compliance Readiness: 82/100 (Strong)

- 3 Active Alerts

Alerts panel:

- "Vendor invoice exceeds usual by 300%."

- "General liability insurance expires in 21 days."

- "Business license expired Sept 30."

User clicks 'Renew License' → uploads new PDF → alert auto-resolves.
System rescans → updates compliance score to 91.

In Short

Fraud & Compliance = The Business Security & Accountability Hub of LightSignal.
It automatically monitors transactions, vendors, licenses, permits, taxes, and inspections — surfacing what's suspicious, expiring, or at risk.
No chatbot, no noise — just clear dashboards, alerts, and easy actions to stay compliant, protected, and audit-ready at all times.

Tab: User Management

KPIs:

Icon	KPI	Description
👥	**Active Team Members**	Number of users with platform access.
🔑	**Access Roles Configured**	Number of defined permission tiers (Admin, Manager, Analyst, etc.).
🕐	**Last Login Activity**	Most recent user activity or authentication timestamp.
📜	**Pending Invites**	Invitations not yet accepted.
🔐	**Two-Factor Authentication Usage**	% of users with 2FA enabled.

| ⚠️ | **Access Alerts** | | Any unverified users or failed login attempts. |

Sections:

1️⃣ Team Directory

Icons: 👥 🧾

- Displays all team members with name, title, and access role.

- **Columns:**

Name	Role	Department	Email	Last Login	Status	Actions
Sarah Patel	Admin	Finance	sarah@lightsignal.ai	Oct 9	✅ Active	Edit
Kevin Li	Analyst	Operations	kevin@...	Oct 7	🟡 Pending	Resend
Maria Gomez	Manager	Sales	maria@...	Oct 10	✅ Active	Disable

-
- Role color indicators (Admin 🔴, Manager 🟠, Staff 🟢, Viewer 🔵).

2️⃣ Roles & Permissions

Icons: 🔑 ⚙️

Default tiers (editable):

- **Admin:** Full access (billing, users, settings, integrations).

- **Manager:** Read/write to all dashboards, cannot manage billing or users.

- **Analyst:** Read-only access to financial and operations data.

- **Staff:** View assigned tabs only (e.g., Inventory or Operations).

- **External Advisor:** Read-only limited access (e.g., accountant).

Custom roles can be created with toggles:

- ✅ Financial Overview

- ✅ Scenario Planning Lab

- ✅ Opportunities

- ✅ Tax Optimization

- ✅ Fraud & Compliance

- ✅ Business Profile Editor

3️⃣ Access Controls

Icons: 🔐 🛡️

- Two-Factor Authentication enforcement toggle.

- IP whitelisting / session control.

- Single Sign-On support (Google Workspace, Microsoft Entra, Okta).

- Email verification for new users.

- "Login Alerts" for Admins (notify on new device sign-ins).

4️⃣ Invitations & Approvals

Icons: ✉️ ✅

- Add new team member → choose role → send invite via email.

- Track pending invitations and resend.

- Admin approval required for external collaborators (accountants, advisors).

5️⃣ Audit Log

Icons: 🧾 📋

Chronological record of user actions for security & compliance.

Date	User	Action	Target	Status
Oct 9	Sarah Patel	Edited Business Profile	Company Info	✅
Oct 8	Kevin Li	Viewed Scenario Planning Lab	—	✅
Oct 7	Maria Gomez	Changed Tax Settings	Preferences	✅

6️⃣ Access Summary Report

- PDF summary showing current users, roles, and privileges.

- Audit report export for compliance or investor reviews.

In Short:

User Management = Control Center for Access, Roles, and Accountability.
Ensures secure, role-based access for team members, advisors, and stakeholders while maintaining full audit traceability.

Tab: Settings

Sections:

1 General Settings

Icons: ⚙️ 🏢

- Company name, timezone, and base currency.

- Default reporting period (monthly, quarterly, annually).

- Business unit selection (for multi-location setups).

- Enable/disable demo mode toggle.

---

2 Integrations

Icons: 🔗 💾

- Connect/disconnect APIs:

    - QuickBooks / Xero / Sage / NetSuite

    - Banking (Plaid, MX, Finicity)

    - CRM (HubSpot, Salesforce, Zoho)

    - Payroll (Gusto, ADP, Paychex)

- ○ Asset Management (Asset Panda, UpKeep, Fiix, Snipe-IT, EZOfficeInventory, Fleetio, MaintainX, Limble)

- ○ Inventory / POS (Square, Shopify, Lightspeed, Clover, Toast)

- ○ Document Storage (Google Drive, Dropbox, OneDrive)

Each shows: connection status, sync frequency, last sync, and provenance badge.

3️⃣ Data & Privacy

Icons: 🔐 🧠

- Toggle "Allow peer benchmarking."

- Toggle "Allow AI to use anonymized data for insights."

- Data retention and deletion policy controls.

- Encryption and compliance summary (SOC2, GDPR, CCPA).

4️⃣ Notifications

Icons: 🔔 📫

- Email and in-app notification preferences.

  - ○ Alerts (fraud, compliance, deadlines, anomalies).

  - ○ Weekly reports.

  - ○ Monthly summaries.

- Custom thresholds (e.g., "Alert me if cash < $10k" or "Permit expires <30 days").

5️⃣ Interface & Theme

Icons: 🖥️ 🎨

- Light / Dark / Auto themes.

- Dashboard density (compact, normal, spacious).

- Language preferences.

- Widget layout options.

6️⃣ Billing & Subscription

Icons: 💳 🧾

- Plan type (Basic / Pro / Enterprise).

- Renewal date, next payment, invoice history.

- Add payment method or cancel subscription.

7️⃣ Backup & Restore

Icons: 💾 🧰

- Manual data backup (JSON / CSV export).

- Cloud sync backup logs.

- Restore to prior snapshot.

In Short:

Settings = The Nerve Center for Personalization, Security, and Integrations.
Where administrators tailor LightSignal's behavior, connections, alerts, and visual experience to match the company's structure and preferences.

Tab: Business Profile

KPIs:

Icon	KPI	Description
🏢	**Business Overview Completed %**	Profile completeness score for analysis accuracy.
🧾	**Data Sync Confidence**	% of financial/operational data actively synced.
📍	**Primary Location**	Main business address or operating area.
🔢	**NAICS / Industry Code**	Defines benchmark cohort for peer analysis.
💰	**Revenue Size Bracket**	Estimated range used for scaling forecasts and benchmarks.

Sections:

1️⃣ General Company Information

Icons: 🏢 🧭

- Business Name

- Legal Entity Type (LLC, S-Corp, Sole Prop, etc.)

- EIN / Registration Number

- Headquarters & Locations (supports multiple)

- Founded Date

- Timezone

- Currency

- Ownership structure (% owners, key stakeholders)

2️⃣ Industry Classification

Icons: 🏭 📊

- NAICS Code (auto-suggested via search).

- Industry & Subsector.

- Business model: B2B / B2C / Hybrid.

- Product or service categories.

- Competitor cohort (based on peer data).

- Industry benchmark set selection (e.g., "Food Service," "Construction," "E-commerce").

3️⃣ Operational Overview

Icons: ⚙️ 🚚

- Number of employees (FTE + part-time).

- Primary locations (HQ, retail sites, warehouses).

- Hours of operation.

- Key vendors and suppliers.

- Major recurring expenses (rent, payroll, inventory, utilities).

- Service areas or delivery zones (map-based).

4️⃣ Financial Summary

Icons: 💰 📈

- Linked accounting system: QuickBooks / Xero / Sage.

- Average monthly revenue, expenses, and net margin (auto-calculated).

- Fiscal year start.

- Top 3 expense categories.

- Banking relationships (for interest and credit comparisons).

- Historical data availability: 6m, 12m, or 24m.

5️⃣ Assets & Equipment

Icons: 🚚 🏗️

- List of key business assets:

    - Properties

    - Vehicles

    - Equipment

    - Technology systems

- For each:

    - Purchase date

    - Cost

    - Current book value

    - Depreciation schedule

○ Maintenance status

Used for: Asset Management tab + Depreciation forecasting.

6️⃣ Customer & Market Data

Icons: 👥 🛒

- Customer type breakdown (% consumer vs business).

- Customer volume (monthly average).

- Retention rate & repeat customer ratio (if integrated).

- Market region served (city/state/region).

- Seasonal demand patterns (auto-detected).

7️⃣ Risk & Exposure Data

Icons: ⚠️ 🧭

- Business insurance details (coverage, renewal date).

- Debt obligations (linked from Debt Management tab).

- Key dependencies (top 3 customers or suppliers).

- Risk factors (macro, operational, or regional).

- Past compliance issues or audit history.

8️⃣ Strategic Objectives

Icons: 🎯 🪜

- Short-term (0–12 months) goals.

- Mid-term (1–3 years) growth plans.

- Long-term (3–5 years) vision statement.

- AI uses this section to tailor recommendations in:

    - Scenario Planning Lab

    - Business Insights

    - Tax Optimization

    - Success Planning

9️⃣ Uploads & Documentation

Icons: 📁 🧾

- Upload foundational business docs:

    - Articles of Incorporation

    - EIN confirmation

    - Operating agreements

    - Business plan / pitch deck

    - Insurance certificates

    - Lease contracts

- Metadata extracted (type, issuer, expiration, category).

🔟 Profile Completeness Meter

Icons: 📊 ✅

- Visual progress bar showing % filled (0–100).

- AI note:

    "Your profile is 84% complete — adding asset data will improve scenario accuracy and benchmarking confidence."

In Short:

Business Profile = The Brain of LightSignal.
It's the foundation for every AI insight, forecast, and recommendation.
By maintaining an accurate, complete profile — including company structure, assets, industry, and goals — LightSignal can deliver *context-aware financial intelligence* customized precisely to each business's reality.

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6) Assistant API / Tools

- **fetch_financial_overview(company_id)** → returns last 12 months data.

- **compute_kpis_and_forecast(overview_payload)** → computes ratios, growth, runway.

- **research_market(naics, region)** → pulls industry updates via Perplexity.

- **simulate_scenario(levers)** → runs what-if analysis.

- **compare_to_peers(naics, size)** → pulls Pinecone vector neighbors.

- **generate_advisor_summary(kpi_data, scenario)** → returns plain-language insight.

---

7) Design / UI

Mood: Clean, fintech aesthetic (think Ramp + Notion).
Colors: White/charcoal base with accent blues and soft gradients.
UI Components: Card grids, ratio chips, tooltips, progress bars.
Examples: Mercury, Brex, and Pigment dashboards.

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8) Technical Setup

Frontend: Next.js + Tailwind.
Backend: FastAPI or Node/Express.
Database: MongoDB (financials, profiles, scenarios).
Vector Store: Pinecone (business embeddings + industry context).
APIs: QuickBooks, OpenAI, Perplexity.
Deployment: Vercel (frontend), Render (backend), Neon (DB).

---

9) Demo Mode – Pinecone Data

Goal: Simulate every industry/business type dynamically.

- Use NAICS dataset to pre-generate embeddings (3072-d vectors).

- Each vector = one synthetic business scenario with metadata: NAICS, region, size, margins, typical KPIs.

- Demo businesses retrieved via `query_vector` matching user selection.
  Example Query: `pinecone.query(top_k=1, vector=embedding('construction small business'))`

---

10) Deliverables

✅ Full backend API suite (dual AI + Pinecone integration)
✅ Frontend refactor with modular tabbed dashboard
✅ Demo mode generator for all industries
✅ Deployment instructions + Postman collection
✅ Dual AI assistant orchestration (OpenAI for financial, Perplexity for market)

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11) Value Proposition Summary

LightSignal isn't accounting software — it's a **financial intelligence platform**. It helps SMBs forecast, adapt, and grow by merging internal analytics, external insights, and intelligent simulation. Its **dual-AI orchestration + Pinecone context engine** make it the first tool that can explain, predict, and advise — not just report.