Zorinthia

These examples illustrate the structure, depth, and type of output produced during a Phase 1 diagnostic. They are anonymised and provided to support decision-making — not as case studies or endorsements.

Coffee Roasting: Operations Digitisation Assessment

Background Context

The coffee roaster receives frequent **supplier invoices** for green beans, packaging, maintenance, and logistics — most arriving as **paper or PDF documents**. These are manually captured into spreadsheets and basic accounting software. **Stock levels are tracked inconsistently**, with production volumes logged by hand during roasting runs.

The distribution process is also paper-based. Delivery notes, route logs, and customer confirmations are filed physically, making it difficult to reconcile deliveries with invoices or sales records. The owner and manager lack real-time visibility into cost per roast batch, yield and waste, inventory usage versus sales, and profitability by customer or channel. The roasting machine may expose PLC or sensor data (e.g. batch weight, roast time, temperature curves), but **this data is currently unused**. At the same time, online sales and website traffic are tracked separately via tools such as Google Analytics, with **no connection to production or financial data**. The goal is to create a simple, integrated data and automation platform that supports finance, production, and distribution — without adding administrative burden to a small team.

Executive Summary

The platform is an integrated data and automation solution for small coffee roasters, transforming manual, paper-based operations into a data-informed, profitable business. The platform digitizes critical processes—supplier invoice capture, inventory tracking, batch logging, and delivery management—providing **real-time visibility** into costs, margins, and operational efficiency.

Designed for low-IT, resource-constrained teams, the platform follows a phased "digitize → integrate → automate → optimize" approach with zero-training mobile-first interfaces. Within **6-12 months**, the platform delivers: **80% reduction in manual data entry**, **95%+ inventory accuracy**, month-end financial close reduced from 5 days to 1 day, and real-time profitability visibility by customer, product, and batch.

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1. Product Vision & User Definition

Product Vision Statement

The platform transforms coffee roasting from a manual, reactive operation into a data-informed, profitable business where every batch, sale, and delivery decision is backed by real-time insight into costs, margins, and operational efficiency.

User Types

1. Business Owner - Strategic oversight, financial performance, profitability analysis - Focus: Revenue, margins, cash flow, strategic decisions

2. Operations Manager - Day-to-day coordination, inventory management, production planning - Focus: Stock levels, delivery schedules, supplier management

3. Production/Roasting Staff - Batch execution, quality control, machine operation - Focus: Roasting parameters, batch yields, waste tracking

Selected User: Operations Manager

Primary Objective The Operations Manager aims to maintain optimal stock levels, ensure timely production schedules, and coordinate efficient deliveries while minimizing waste and stockouts.

Key Frustrations with Current System

1. **Lack of Visibility**: No real-time view of green bean inventory versus upcoming production needs; forced to physically check stock or rely on outdated spreadsheets
2. **Reconciliation Nightmares**: Hours spent matching paper delivery notes against invoices and sales records, with frequent discrepancies that are difficult to trace
3. **Reactive Decision-Making**: Unable to anticipate stock shortages or identify slow-moving inventory until problems arise, leading to emergency orders and production delays
4. **Disconnected Information**: Production logs, supplier invoices, and delivery schedules exist in separate systems (paper, email, spreadsheets), requiring constant manual cross-referencing
5. **No Production Insights**: Cannot easily answer basic questions like "Which beans have the best yield?" or "What's our average waste per roast type?" without extensive manual analysis

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2. Strategy & Success Metrics

Core Strategy

Phased Digitization with Progressive Intelligence

The business will follow a "digitize → integrate → automate → optimize" approach tailored to craft manufacturing:

Phase 1: Digital Foundation (Months 1-3)

- Replace paper-based data capture with simple digital forms and mobile-friendly interfaces
- Focus on high-frequency, high-pain processes first: invoice capture, batch logging, delivery notes
- Maintain familiar workflows while capturing structured data in the background

Phase 2: Data Integration (Months 4-6)

- Connect previously siloed data sources (invoices → inventory → production → sales)
- Create unified views that answer critical questions without manual spreadsheet work
- Introduce basic automation (e.g., auto-update inventory on batch completion)

Phase 3: Machine Intelligence (Months 7-9)

- Integrate roasting machine sensor data for automatic batch logging
- Build cost allocation models that connect supplier invoices to finished goods
- Enable predictive insights (reorder points, yield trends)

Phase 4: Optimization & Scale (Months 10-12)

- Implement advanced analytics: customer profitability, route optimization
- Introduce AI-assisted decision support (optimal roast scheduling, demand forecasting)
- Establish feedback loops for continuous improvement

Balancing Simplicity with Rich Data Capture

- **Zero-Training Interface Design**: Mobile-first, intuitive UIs that require no user manual (e.g., "Scan invoice → Confirm → Done")
- **Progressive Disclosure**: Start with essential fields only; advanced options hidden until needed
- **Automation Over Data Entry**: Wherever possible, capture data automatically (barcode scans, machine sensors, email parsing) rather than manual input

- **Contextual Validation**: Real-time alerts for unusual entries ("This batch weight is 50% higher than normal—confirm?")
- **Flexible Rigor**: Allow quick entries during busy periods with optional detailed capture later

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Success Metrics

Primary Objective (6-12 Months) Achieve complete digital traceability from supplier invoice to customer delivery, with real-time visibility into inventory, costs, and margins.

Measurable Outcomes

1. **Paperwork Reduction**: 80% reduction in manual data entry time (from ~10 hours/week to ~2 hours/week) by month 6
2. **Financial Accuracy**: Month-end financial close time reduced from 5 days to 1 day, with 95%+ invoice-to-delivery reconciliation accuracy by month 9
3. **Inventory Precision**: Inventory accuracy improved from ~70% (due to manual tracking errors) to 95%+, with stock-out incidents reduced by 60% within 12 months
4. **Margin Visibility**: Business Owner can view real-time profitability by customer, product type, and batch within 30 seconds (vs. days of spreadsheet analysis) by month 8

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3. End-to-End Operational & Finance Journey

Integrated Process Journey: Supplier Invoice → Delivery & Margin Analysis

Step 1: Invoice Receipt & Digitization

- *Data Capture*: Supplier emails invoice (PDF). The platform's email integration automatically extracts it, or Operations Manager uses mobile app to photograph paper invoice
- *Automation*: OCR + AI extracts key fields (supplier, date, line items, quantities, costs)
- *Human Validation*: Manager reviews extracted data on mobile screen, corrects any errors (e.g., misread quantities), approves in 30 seconds
- *System Action*: Invoice data flows into accounting system via API; green bean SKUs auto-update with pending stock

Step 2: Stock Receipt & Inventory Update

- *Data Capture*: When beans arrive, staff scans barcode or selects supplier from mobile app; confirms delivery against invoice
- *Automation*: The platform matches delivery to pending invoice, updates inventory quantities, flags discrepancies (e.g., "Expected 50kg, received 48kg")
- *Human Validation*: If discrepancy flagged, Manager adds note ("2kg damaged bags") and decides whether to dispute
- *System Action*: Inventory database updated in real-time; green bean stock levels now visible in production dashboard

Step 3: Roasting Batch Execution

- *Data Capture (Automated)*: Roaster starts batch; machine PLC sends data to the platform: batch ID, green bean type/weight, roast profile, start time, temperature curve
- *Data Capture (Manual Supplement)*: Roasting staff uses tablet to log subjective notes ("slight unevenness in color") and any manual adjustments
- *Automation*: The platform calculates:
- Green bean consumption (deducts from inventory)
- Expected finished goods weight based on historical yield % for that bean/profile

- Preliminary batch cost (green beans + allocated overhead)
- *Human Validation*: At batch completion, staff weighs finished goods, enters actual weight; The platform flags if variance from expected exceeds 5%
- *System Action*: Finished goods inventory auto-updates; green bean inventory decreases; production log created with full traceability (bean lot → batch → finished SKU)

Step 4: Cost Allocation & Finished Goods Costing

- *Automation*: The platform allocates costs to the batch:
- Direct materials: Green bean cost from invoice (Step 1)
- Labor: Time-based allocation (batch duration × hourly rate)
- Overhead: Allocated utilities, packaging, equipment depreciation based on batch weight or time
- *System Action*: Each bag/unit of finished coffee now has a calculated unit cost; margins can be computed against selling prices
- *Insight Surfaced*: Dashboard shows "Batch #247: Cost R153/kg, Selling Price R324/kg, Margin 53%"

Step 5: Order Fulfillment & Delivery

- *Data Capture*: Customer orders arrive (online, email, phone); entered into the platform or synced from e-commerce platform
- *Automation*: The platform generates picking lists, allocates inventory (FIFO), creates delivery routes optimized by geography
- *Human Validation*: Delivery staff reviews route on mobile app, marks deliveries as "Completed" with optional customer signature/photo
- *System Action*: Inventory decreases; delivery note auto-generated and emailed to customer; sales revenue recorded

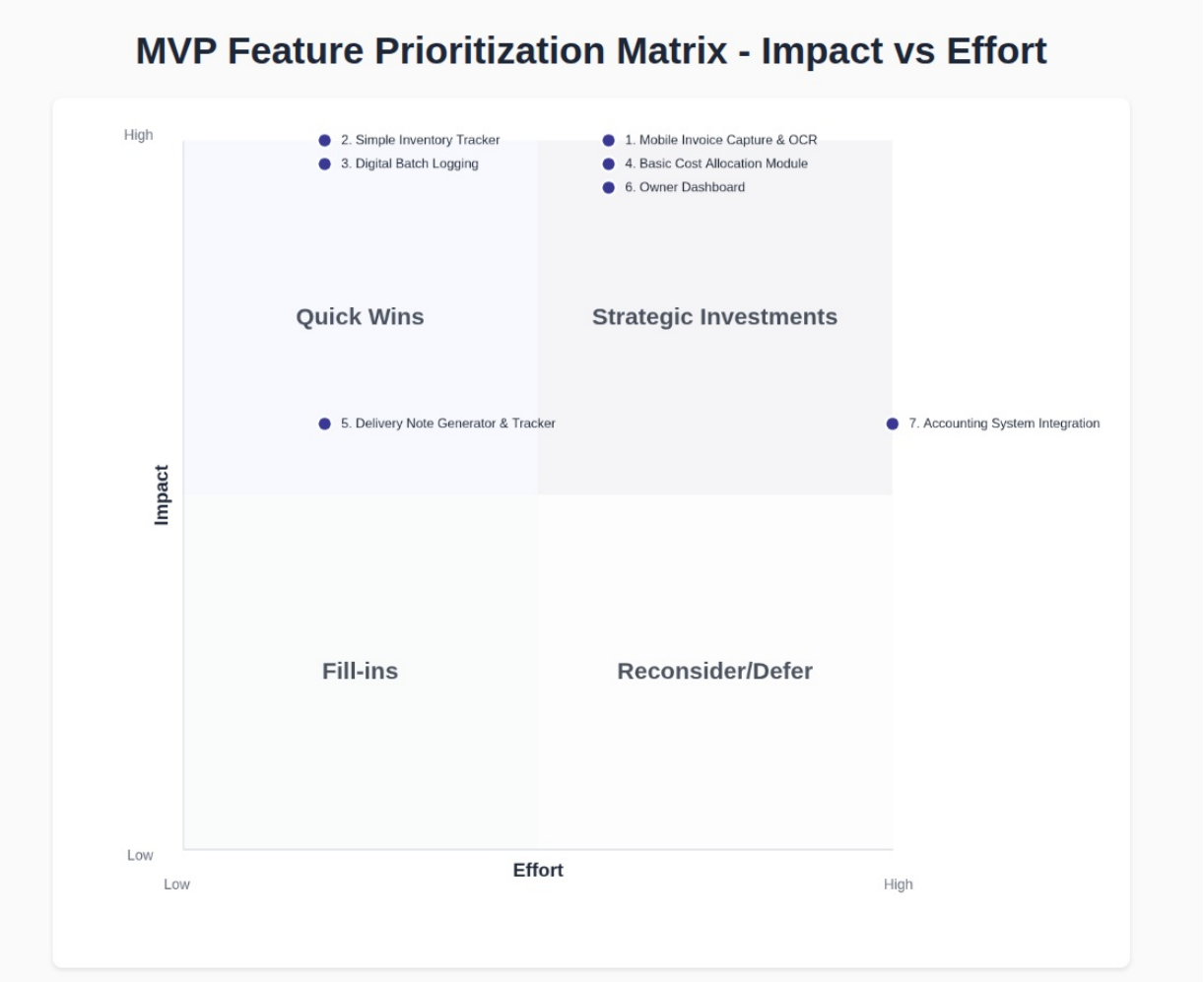
Step 6: Reconciliation & Insight Generation

- *Automation*: The platform continuously reconciles:
- Invoices paid vs. deliveries made
- Inventory consumed vs. production output vs. sales
- Actual costs vs. budgeted costs
- *Insights Surfaced to Owner/Manager*:
- **Dashboard View**: "This month: 1,200kg roasted, R259,200 revenue, R129,600 COGS, 50% gross margin"
- **Alerts**: "Brazilian Santos yield dropped from 85% to 78% in last 3 batches—check quality or roast profile"
- **Customer Profitability**: "Cafe Chain A: 60% margin, 200kg/month; Independent Cafe B: 45% margin, 50kg/month but late payments"
- **Waste Analysis**: "5% avg waste last month (vs. 3% target); highest waste on dark roast profiles"

MVP Feature Set & Prioritization

Essential Features for Minimum Viable Platform

#	Feature Name	Description	Impact	Effort
1	**Mobile Invoice Capture & OCR**	Photograph invoices; auto-extract supplier, date, items, costs	High	Medium
2	**Simple Inventory Tracker**	Real-time green bean and finished goods quantities. Manual adjustments with reason codes (receipt, production, sale, waste)	High	Low
3	**Digital Batch Logging**	Mobile form for roasting staff to log: batch ID, bean type/weight, roast profile, start/end time, yield. Auto-calculate waste percentage	High	Low
4	**Basic Cost Allocation Module**	Assign invoice costs to green bean SKUs. Calculate batch cost (beans + simple overhead allocation)	High	Medium
5	**Delivery Note Generator & Tracker**	Create digital delivery notes from orders. Mobile app for drivers to mark completed deliveries	Medium	Low
6	**Owner Dashboard**	Single-page view: current inventory, this month's production volume, costs, revenue, margin %. Drill-down into batch history and customer sales	High	Medium
7	**Accounting System Integration**	One-way sync: The platform → Xero/QuickBooks (invoices, costs, revenue)	Medium	High



Prioritization: Impact vs. Effort Matrix

High Impact, Low Effort (DO FIRST - Weeks 1-4)

- Feature 2: Simple Inventory Tracker
- Feature 3: Digital Batch Logging
- Feature 5: Delivery Note Generator & Tracker

Rationale: These directly replace painful paper processes with minimal technical complexity; deliver immediate "daily life" improvement.

High Impact, Medium Effort (DO SECOND - Weeks 5-10)

- Feature 1: Mobile Invoice Capture & OCR
- Feature 4: Basic Cost Allocation Module
- Feature 6: Owner Dashboard

Rationale: Require more sophisticated development (OCR, calculations, visualizations) but unlock core value proposition of the platform.

Medium Impact, High Effort (DO LATER - Weeks 11-16)

- Feature 7: Accounting System Integration

Rationale: Important for workflow efficiency, but not blocking; users can manually export/import initially. High effort due to API complexity and error handling.

Deferred to Post-MVP

- Machine sensor integration (requires hardware compatibility assessment)
- Advanced analytics (yield optimization, demand forecasting)
- Customer portal

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4. Data & Technical Considerations

Data Sources & Integrations

1. Accounting/Bookkeeping Software (e.g., Xero, QuickBooks, Sage)

- *Integration Type*: Bidirectional API (The platform pushes invoices, costs, revenue; pulls customer/supplier master data)
- *Data Captured*: Supplier invoices, payment status, chart of accounts, customer billing
- *Challenge*: Authentication (OAuth2), rate limits, handling API version changes
- *Priority*: High (weeks 5-10)

2. Excel Spreadsheets & Historical Data

- *Integration Type*: One-time CSV import wizard + optional ongoing "upload monthly spreadsheet" feature
- *Data Captured*: Historical sales, inventory snapshots, supplier pricing, customer lists
- *Challenge*: Inconsistent formats, data cleaning, handling duplicates
- *Priority*: High (week 1—needed for inventory baseline)

3. Roasting Machine PLC/Sensor Data

- *Integration Type*: Direct machine integration (Modbus, OPC UA, proprietary protocols) or IoT gateway device
- *Data Captured*: Batch weight, roast time, temperature curves, airflow, drum speed
- *Challenge*: Machine compatibility assessment required; custom hardware adapter required for some machines; data volume/storage considerations
- *Priority*: Medium (weeks 12-16—high value but requires technical scoping)

4. Distribution Records

- *Integration Type*: The platform's native mobile app (replaces paper)
- *Data Captured*: Delivery notes, route logs, customer signatures, delivery timestamps, GPS coordinates
- *Challenge*: Offline mode required (drivers operate in areas with intermittent connectivity); data sync when connectivity restored
- *Priority*: High (weeks 3-6)

5. Website Analytics (Google Analytics, e-commerce platform)

- *Integration Type*: API or webhook integration
- *Data Captured*: Traffic sources, conversion rates, online order volumes, customer behavior

- *Challenge*: Mapping web sessions to physical customers; privacy/GDPR compliance
- *Priority*: Low (post-MVP—nice to have for demand forecasting)

6. Email (Supplier Communications)

- *Integration Type*: Email parsing service or Gmail/Outlook API
- *Data Captured*: Invoices (PDF attachments), order confirmations, delivery schedules
- *Challenge*: Parsing unstructured email text; handling non-standard formats; security/permissions
- *Priority*: Medium (weeks 5-8—improves invoice capture automation)

Advanced Use Case: Batch-Level Cost & Margin Analysis with Predictive Yield Optimization

Scenario The Business Owner wants to understand not just overall profitability, but which specific beans, roast profiles, and customer segments drive the highest margins. Additionally, they want to reduce waste by optimizing roast parameters.

Enabled by Integration

- **Supplier Invoices** (Accounting Software): Precise green bean costs per kg, per lot
- **Roasting Machine Data** (PLC Sensors): Granular roast profiles (temperature curves, time, airflow) for every batch
- **Batch Logging** (Platform): Input weight (green beans) vs. output weight (finished goods) → actual yield %
- **Sales Data** (E-commerce + Delivery Records): Selling prices, customer segments, order volumes

How It Works

1. **Batch-Level Costing**: For each batch, The platform calculates:
2. Green bean cost: Batch weight × latest invoice unit cost for that bean
3. Labor: Roast time × hourly labor rate
4. Energy: Roast time × equipment energy consumption (estimated or metered)
5. Packaging: Units produced × packaging cost per unit
6. **Total Batch Cost**: Sum of above → divided by output weight = **Cost per kg**
7. **Margin Analysis**: For each customer order fulfilled from that batch:
8. Revenue: Selling price per kg × quantity sold
9. COGS: Cost per kg (from above) × quantity sold
10. **Gross Margin**: (Revenue - COGS) / Revenue
11. **Profitability Segmentation**: Dashboard shows:
12. **By Bean Origin**: "Ethiopian Yirgacheffe: 55% margin, Colombian Supremo: 48% margin"
13. **By Roast Profile**: "Medium roast: 52% margin, Dark roast: 46% margin (higher waste)"
14. **By Customer**: "Wholesale customers: 38% margin, Direct online: 62% margin"
15. **Predictive Yield Optimization**: Machine learning model trained on historical batches:
16. Input Features: Bean type, initial moisture content, roast profile (temp curve), ambient humidity, batch size
17. Target Variable: Yield % (output weight / input weight)
18. Model Output: "For this bean + profile, expected yield is 82% ± 2%"
19. **Actionable Insight**: If actual yield is 75%, system alerts: "Yield below expected—check roast profile or bean quality. Historical data suggests reducing end temp by 5°C improved yield by 3% for this bean."
20. **Dynamic Pricing Recommendations**:
21. If margin on certain beans is consistently low due to supplier cost increases, The platform suggests: "Brazilian Santos costs up 15% this quarter; consider 8% price increase to maintain target margin, or promote higher-margin Ethiopian blend."

Business Impact

- Owner identifies and focuses on high-margin products and customers
- Waste reduced by 20% through profile optimization guided by data
- Pricing decisions backed by real cost data, not guesswork
- Can objectively compare supplier value (cost vs. yield vs. customer demand)

Risks & Mitigation

Risk 1: Inconsistent Data Capture Leading to Poor Data Quality

Problem: Roasting staff forget to log batches during busy periods, or enter incomplete/inaccurate data (e.g., guessing weights instead of measuring). This undermines inventory accuracy and cost calculations.

Mitigation Strategies:

- **Default Automation**: When roasting machine integration is implemented, batch data is captured automatically (no manual logging required)
- **Fail-Safes**: Mobile app shows "3 batches started today, only 2 logged—missing data?" alert at end of shift
- **Progressive Validation**: Real-time data checks (e.g., "Yield is 95%—most batches are 80-85%. Confirm?") catch errors at entry point
- **Simplified Entry**: Pre-populate common values (e.g., "Last 10 batches used Colombian Supremo—use again? [Yes]/No"); reduce typing
- **Accountability & Feedback**: Weekly report to Operations Manager shows data completeness score; gamify with "100% logging week" recognition
- **Graceful Degradation**: If a batch isn't logged immediately, allow retroactive entry with reason code ("Forgot during busy morning"); system warns if inventory reconciliation is affected

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Risk 2: Roasting Machine Integration Failure or Incompatibility

Problem: The roasting machine uses proprietary, undocumented protocols, or has no digital interface. Integration attempts risk failure, wasting development time and delaying MVP.

Mitigation Strategies:

- **Pre-Implementation Assessment**: Before committing to machine integration in MVP, conduct technical discovery:
- Contact roasting machine manufacturer for API/protocol documentation
- Engage third-party IoT integration specialist for feasibility assessment
- Budget 2-3 weeks for proof-of-concept before full build
- **Plan B: Sensor Overlay**: When machine lacks digital interface, install aftermarket IoT sensors (weight scale, temperature probe, timer) that connect to the platform independently
- **Plan C: Hybrid Approach**: Capture some data automatically (e.g., start/end time via NFC tap or QR code scan by staff) and other data manually (weights, temperatures)
- **Decouple Dependency**: Design the platform architecture so manual batch logging works fully independent of machine integration; machine data is an enhancement, not a foundation
- **Phased Rollout**: Start with manual logging (MVP); add machine integration in Phase 2 once proven with minimal-complexity data (e.g., timestamps), then expand to richer data (temperature curves)

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5. Implementation & Governance Plan

Implementation Approach for Low-IT, Resource-Constrained Environment

Data Ownership & Responsibilities

Business Owner

- *Ownership*: Strategic data—profitability reports, customer segmentation, financial performance
- *Responsibilities*:
- Review monthly dashboard and approve major pricing/investment decisions based on insights
- Final authority on data access permissions (who sees what reports)
- Weekly 15-minute "data review" meeting with Operations Manager
- *Time Commitment*: 1-2 hours/week

Operations Manager

- *Ownership*: Inventory accuracy, supplier relationships, production planning data
- *Responsibilities*:
- Validate and approve all supplier invoices in the platform (daily, 10-15 mins)
- Reconcile weekly inventory counts (physical vs. system) and investigate discrepancies
- Monitor production logs and flag unusual yields/waste to Owner
- Train and support roasting/delivery staff on platform usage
- *Time Commitment*: 5-7 hours/week (reducing from current 12+ hours on manual paperwork)

Production/Roasting Staff

- *Ownership*: Batch-level production data
- *Responsibilities*:
- Log each roasting batch (or validate auto-captured machine data)
- Report waste and quality issues via mobile app
- Notify Manager immediately if system is unavailable (fallback to paper log)
- *Time Commitment*: 2-3 minutes per batch

Delivery Staff

- *Ownership*: Delivery confirmation and customer feedback data
- *Responsibilities*:
- Mark deliveries complete in mobile app with customer signature/photo
- Report delivery issues (customer unavailable, damaged goods) in real-time
- *Time Commitment*: 1 minute per delivery

Basic Governance Practices

1. Data Accuracy Controls

- **Weekly Inventory Reconciliation**: Every Monday, Operations Manager conducts quick physical spot-check of 5-10 key SKUs; compares to platform system counts; investigates variances >5%
- **Month-End Full Reconciliation**: Complete physical inventory count; system adjustments with reason codes (waste, theft, data entry error)
- **Dual Verification for High-Value Transactions**: Invoices >R9,000 require Owner approval in addition to Manager validation

2. Data Consistency Standards

- **Master Data Governance**: Operations Manager maintains "single source of truth" for:
- Supplier names (no variations: "ABC Coffee Co." not "ABC Coffee" or "ABC Co.")
- Product SKUs and naming conventions
- Customer names and addresses
- **Mandatory Fields**: Core fields cannot be skipped (e.g., batch must have bean type, weight, date)

- **Controlled Vocabularies**: Drop-down lists for common entries (bean origins, roast profiles, waste reasons) to prevent typos and inconsistency

3. Data Review Cadence

- **Daily**: Operations Manager reviews dashboard for alerts (stock-outs, unusual yields)
- **Weekly**: Owner + Manager 15-min review meeting—trends, issues, priorities
- **Monthly**: Deep-dive analysis—customer profitability, supplier performance, margin trends; identify improvement actions

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Phased Digitization of Paper Processes

Month 1-2: Foundation (Simple Digitization)

- **Replace**: Paper delivery notes → Mobile app delivery confirmation
- **Replace**: Paper batch logs → Digital batch logging form (tablet in roasting area)
- **Maintain**: Paper invoices filed → but also photographed and uploaded to the platform
- **Outcome**: Staff comfortable with mobile/tablet; paper still exists as backup

Month 3-4: Integration (Connect the Dots)

- **Replace**: Excel inventory spreadsheet → platform real-time inventory (auto-updated by batch logs and deliveries)
- **Replace**: Manual invoice entry into accounting software → platform auto-syncs invoices to Xero/QuickBooks
- **Maintain**: Physical invoice filing (regulatory requirement), but no longer used for daily operations
- **Outcome**: Single source of truth for inventory and costs; reduced double-entry

Month 5-6: Automation (Let Systems Work)

- **Replace**: Manual month-end cost calculations (spreadsheet formulas) → platform auto-calculates batch costs and margins
- **Replace**: Emailed delivery schedules → platform generates optimized routes
- **Eliminate**: Paper backup logs (digital system proven reliable)
- **Outcome**: Staff rarely touch paper; focus shifts from data entry to using insights

Month 7-12: Optimization (Advanced Intelligence)

- **Add**: Roasting machine sensor integration (subject to machine compatibility)
- **Add**: Predictive reorder alerts ("Colombian beans will stock out in 8 days based on production forecast")
- **Add**: Customer portal (customers can view order history, invoices)
- **Outcome**: Business operates proactively based on data, not reactively based on crises

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Delivery Phasing for Low-Technical-Skills Team

Context

- Team has basic smartphone/tablet literacy but no coding or database skills
- No IT support—The platform is designed as an "appliance-like" solution (just works, no configuration)
- Daily operations cannot accommodate multi-day downtime or learning curves that disrupt production

Phase 0: Pre-Launch Preparation (Week 0)

- **Configure the platform**: External consultant/vendor pre-loads master data (supplier list, product SKUs, customer list) from Excel exports
- **Training**: 2-hour hands-on session with Owner, Manager, and 1-2 key staff; focus on "day in the life" workflows
- **Parallel Run Setup**: Keep existing paper processes; The platform used in "shadow mode" for 1 week (staff enter data in both systems)

Phase 1: Delivery & Batch Logging (Weeks 1-3)

- **Go-Live**: Delivery staff and roasting staff start using mobile/tablet apps
- **Support**: Daily check-in calls (10 mins) with Manager to troubleshoot
- **Fallback**: Paper forms available; if app fails, staff use paper and Manager back-enters later
- **Success Criteria**: 80% of deliveries and batches logged digitally; staff report apps are "easy to use"

Phase 2: Inventory & Invoice Digitization (Weeks 4-7)

- **Go-Live**: Manager uses the platform for invoice capture and inventory management
- **Support**: Weekly 30-min coaching sessions with Manager (screen-share to troubleshoot)
- **Fallback**: Excel inventory still updated (read-only) for first 2 weeks as confidence builds
- **Success Criteria**: Manager trusts platform inventory numbers; stops updating Excel

Phase 3: Accounting Integration & Cost Analysis (Weeks 8-11)

- **Go-Live**: The platform syncs to accounting software; Owner starts using dashboard
- **Support**: Bi-weekly reviews with Owner to interpret reports and refine metrics
- **Fallback**: Manual export to accounting software available if sync errors occur
- **Success Criteria**: Owner makes pricing decision based on platform margin report; month-end close completed in 1 day

Phase 4: Continuous Improvement (Weeks 12+)

- **Support Model Transition**: From active coaching → on-demand help desk (email/chat)
- **Feature Requests**: Quarterly reviews to prioritize new features based on usage data and user feedback
- **Advanced Features**: Machine integration, advanced analytics rolled out incrementally based on business readiness

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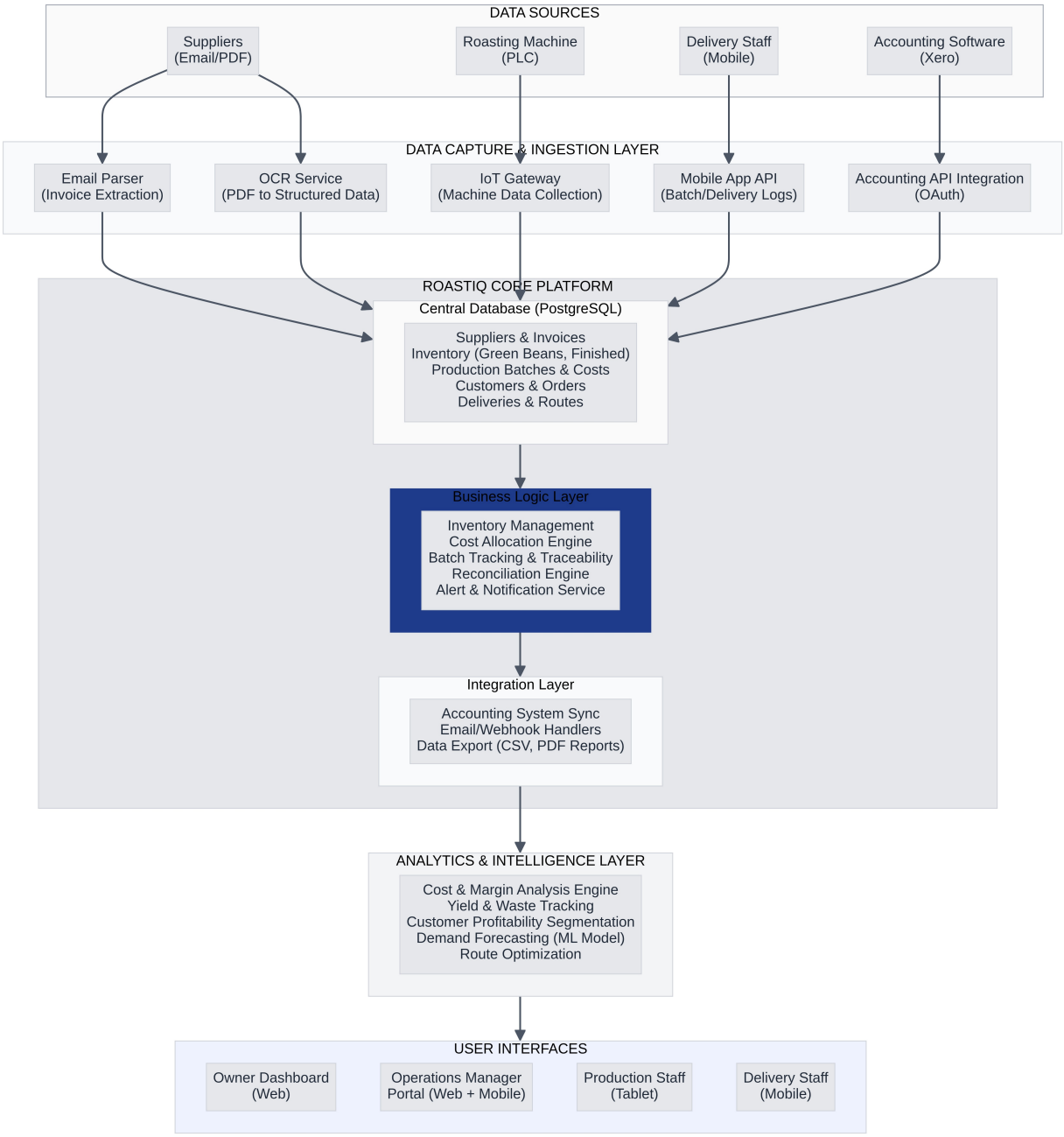
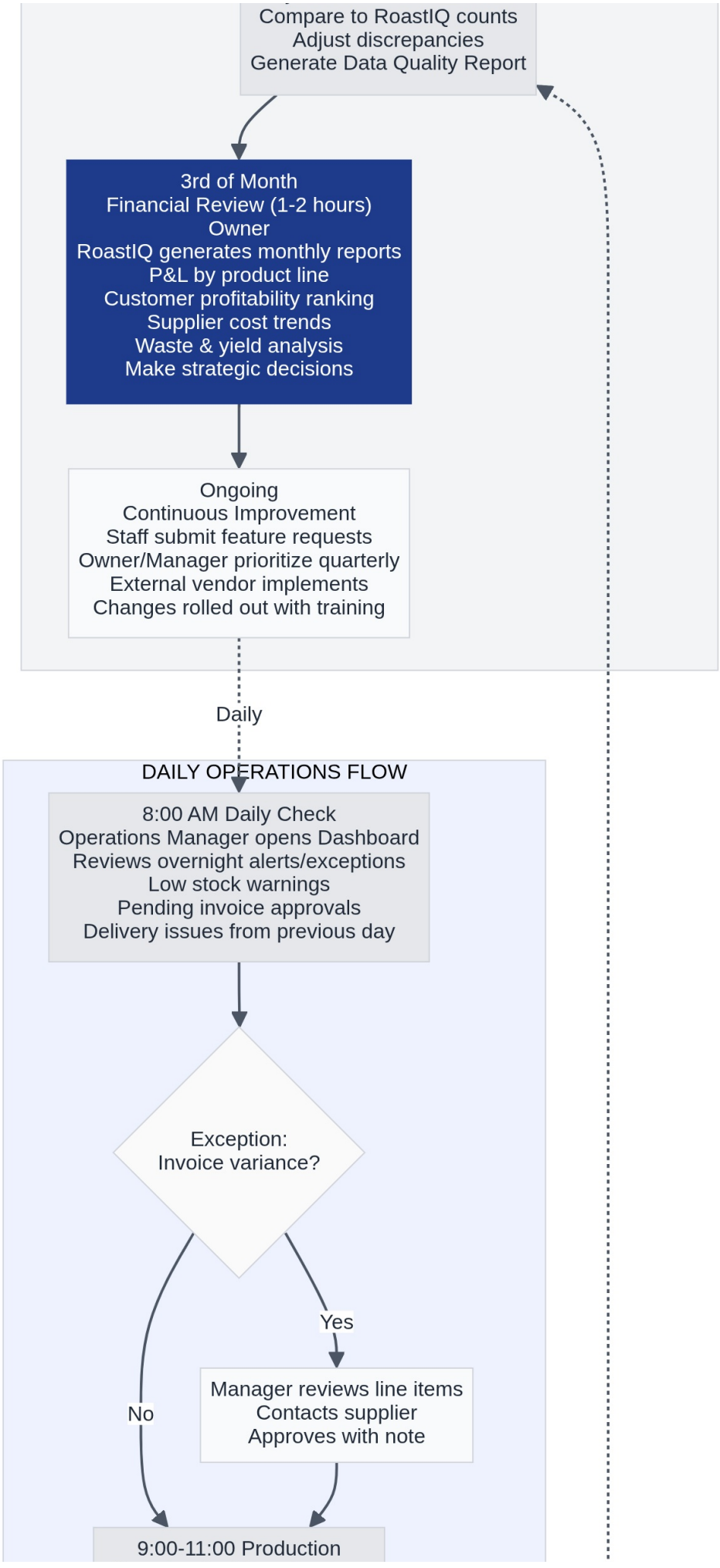
High-Level System Architecture

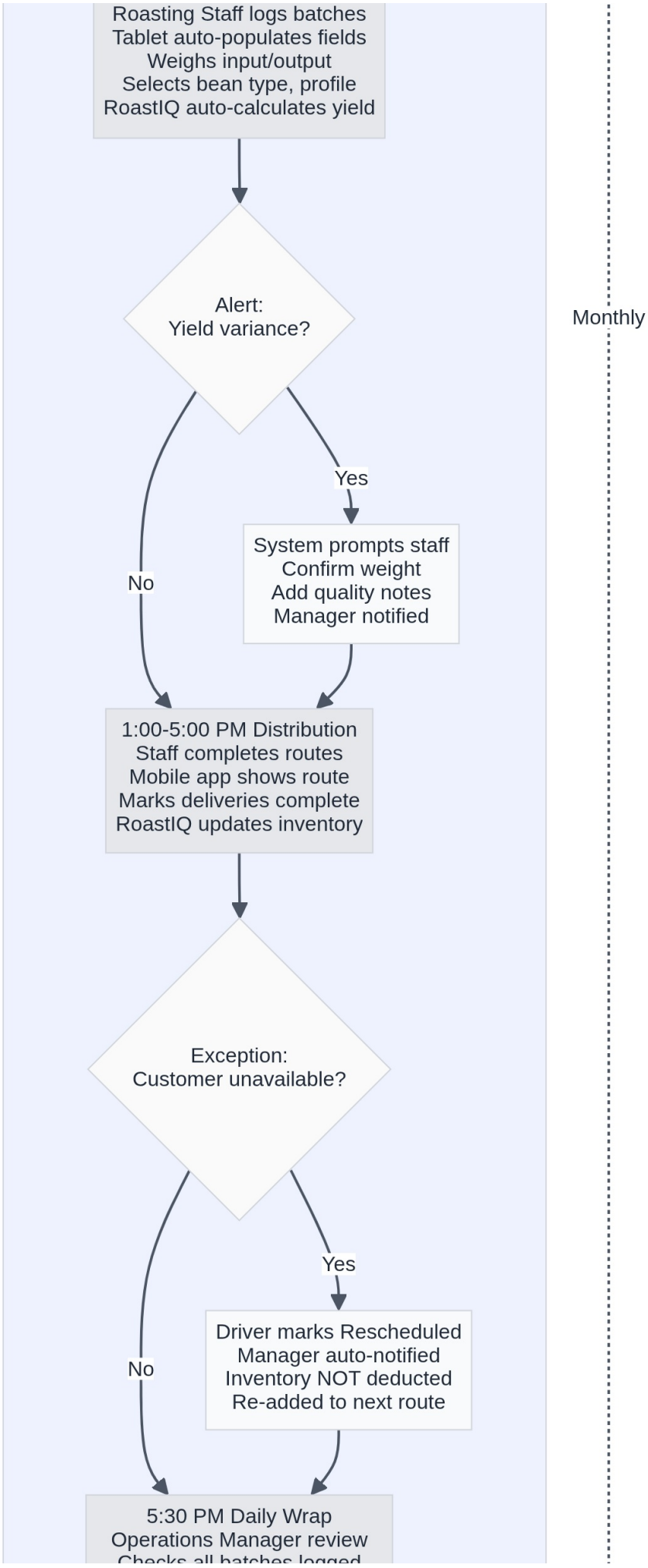


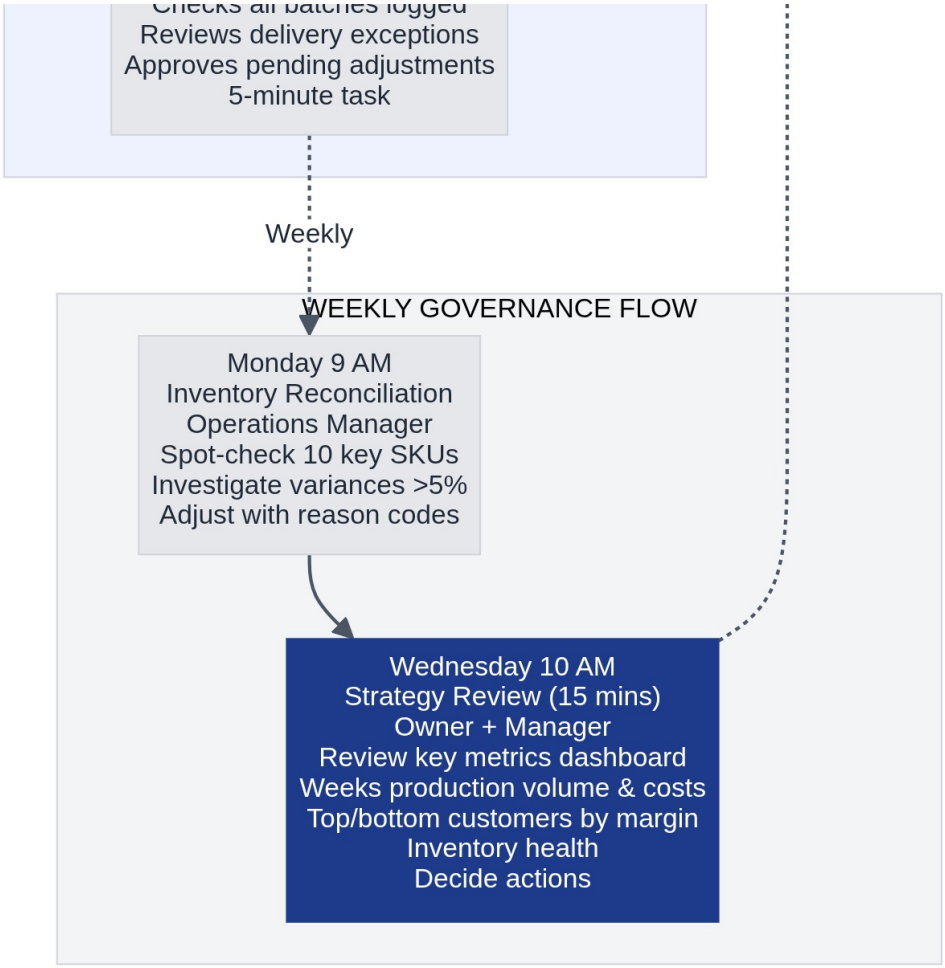
Key Architecture Principles

- **Cloud-Hosted SaaS**: No on-premise servers; accessible from any device with internet
- **Mobile-First**: All data entry interfaces optimized for phones/tablets
- **Offline Capability**: Mobile apps cache data; sync when connectivity restored
- **API-First Design**: All functions accessible via API for future integrations
- **Modular**: Components can be deployed incrementally (start with core, add analytics later)

Governance & Decision Flow Workflow


Compare to RoastIQ counts
Adjust discrepancies
Generate Data Quality Report
3rd of Month
Financial Review (1-2 hours)
Owner
RoastIQ generates monthly reports
P&L by product line
Customer profitability ranking
Supplier cost trends
Waste & yield analysis
Make strategic decisions
Ongoing
Continuous Improvement
Staff submit feature requests
Owner/Manager prioritize quarterly
External vendor implements
Changes rolled out with training
Daily
DAILY OPERATIONS FLOW
8:00 AM Daily Check
Operations Manager opens Dashboard
Reviews overnight alerts/exceptions
Low stock warnings
Pending invoice approvals
Delivery issues from previous day
Exception:
Invoice variance?
Yes
No
Manager reviews line items
Contacts supplier
Approves with note
9:00-11:00 Production


Roasting Staff logs batches
Tablet auto-populates fields
Weighs input/output
Selects bean type, profile
RoastIQ auto-calculates yield
Alert:
Yield variance?
Yes
No
System prompts staff
Confirm weight
Add quality notes
Manager notified
1:00-5:00 PM Distribution
Staff completes routes
Mobile app shows route
Marks deliveries complete
RoastIQ updates inventory
Exception:
Customer unavailable?
Yes
No
Driver marks Rescheduled
Manager auto-notified
Inventory NOT deducted
Re-added to next route
5:30 PM Daily Wrap
Operations Manager review
Monthly



Key Governance Principles

1. **Alerts, Not Avalanches**: System only notifies humans of exceptions (unusual yields, stock-outs, large invoices)—not routine successful operations
2. **Progressive Escalation**: Minor issues handled by staff; medium by Manager; major decisions by Owner
3. **Audit Trail**: Every data change logged (who, what, when, why) for accountability
4. **Blame-Free Culture**: Data errors treated as system improvement opportunities, not staff punishment
5. **Data-Driven Meetings**: Weekly/monthly reviews structured around platform reports, not anecdotes

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Conclusion

The platform transforms a small coffee roaster from reactive firefighting into proactive, data-informed decision-making. By phasing implementation from simple digitization to integrated intelligence, and designing for a low-IT, resource-constrained team, the approach delivers immediate operational relief while building a foundation for long-term optimization and scale.

Success depends on:

- Relentless focus on simplicity and zero-training UX
- Gradual digitization that respects existing workflows
- Clear ownership and lightweight governance
- Prioritizing quick wins (inventory tracking, batch logging) before complex features (machine learning, forecasting)

Within 6-12 months, the business owner will gain real-time visibility into costs, margins, and profitability—enabling confident pricing, supplier negotiation, and growth decisions that were previously impossible with paper-based chaos.