MAPLE HEIR
PROCURE-TO-PAY (P2P)
PROCESS REDESIGN REPORT

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Transforming Supplier Acknowledgment and Communication Excellence

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Course: DGIN 5200 – Foundation in Business
Assigned Twist: Supplier Communication and Acknowledgment Discipline

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Executive Summary

Maple Heir's current Procure-to-Pay process relies on manual, email-driven workflows that prevent consistent supplier acknowledgments. Leadership mandates: **achieve firm ship dates on ≥ 85% of purchase orders within 48 hours ahead of peak months,** a capability absent today due to incomplete requisitions and bottlenecked communication. This report applies the IS Business Value (OPA) framework to address two critical problems: (1) 33% of requisitions lack complete specifications, causing 2 to 3 day rework delays, and (2) email-dependent acknowledgments average 5 – 7 days with 40% missing ship date commitments.

Proposed solution: Implement structured requisition validation (TRANSFORM) and a cloud based ERP supplier portal with 48 hour boundary timers and automated escalations (AUTOMATE). Expected outcomes: requisition to PO cycle time reduces from 4.3 to ≤ 2 days; acknowledgment compliance reaches 85%; invoice mismatch drops from 14% to < 5%; AP touch time drops from 12 to 6 – 8 minutes per invoice.

Recommended platform: Oracle NetSuite Procurement Cloud (4 – 6 month implementation, $150K – $250K cost, 13 – 14 month payback). Implementation phased over 6 months with dedicated supplier onboarding and change management. Key risks (internal resistance, supplier adoption, data quality) managed through executive sponsorship, early-adopter coalitions, phased rollout, and comprehensive training.

Part 1: As-Is Process Summary and Twist Context

Current State Overview

Maple Heir's P2P process spans six internal lanes (Production Planning, Dot Requestor, Purchasing Coordinator, Finance Director, Receiving Quality, and Accounts Payable) and one external lane as the Supplier pool. The process includes about 25 – 35 tasks with 6 – 10 exclusive gateways, explicit message waits, and one collapsed "Resolve discrepancy" sub-process (detailed in Appendix A).

Key workflow stages: Requisition initiation → Multi-level approval → PO creation and dispatch → Supplier acknowledgment → Receipt confirmation → Invoice matching and payment. The AS-IS BPMN is documented in Appendix A with lane assignments, message flows (PO, acknowledgment, proof of delivery, invoice), and timing callouts.

The Acknowledgment Challenge (Twist Definition)

Business Mandate: Supplier acknowledgments are inconsistent and unreliable. Leadership demands firm ship dates on ≥ **85% of POs within 48 hours** ahead of peak months (Dec – Mar).

Current State Gap:

- Supplier acknowledgments arrive via informal emails (no structured commitment)
- No mandatory data capture of committed ship dates, partial shipment flags, or delay reasons
- PC must manually follow-up, average acknowledgment lead time is about 5 to 7 days
- 40% of acknowledgments lack or conflict on ship date information
- During peak periods, 15 – 20% of POs experience up to 7 day delays due to email congestion

Redesign Mandate: Enforce and measure acknowledgments by implementing mandatory data fields, automated 48-hour timers with escalations, real-time KPI dashboards, and SLA-based incentives/penalties aligned to the 85% target.

Part 2: Problems and Root Causes

Problem 1: Incomplete Requisition Details (33% Rework Rate)

Problem Statement: One-third of requisitions lack complete specifications (materials, quantities, price, delivery dates, and cost centers), forcing purchasing coordinator to contact dot requesters for clarification. This rework cycle adds 2 to 3 days to Purchase Order (PO) creation & surges rush freight premiums (~$250/order as according to the assumption starter pack).

Root Causes following the OPA framework:

- Manual data entry without validation rules; no required field enforcement
- No central template or specification checklist; unclear standards
- PC bottlenecks with limited capacity during peak periods
- No upstream validation gate: errors pass to PC instead of being caught at source

Evidence: "About a third of the time, specs are incomplete" (AS-IS process narrative, point 5), 2 to 3 days average delay per incomplete requisition; monthly cost impact: ~$4,200 in expedite shipping to recover delays. Industry baseline: packaging materials companies experience 20 – 40% rework without structured intake.

Impact: Production schedule disruptions, increased PC workload, rework cycles, supplier confusion, elevated expedite costs.

Problem 2: Email-Driven Bottlenecks and Communication Risks

Problem Statement: Every critical P2P step (PO dispatch, acknowledgment receipt, approval routing, receipt confirmation, invoice authorization) depends on email. This creates systemic vulnerabilities such as inbox delays, manually copy-pasted data prone to errors, fragmented audit trails, compliance risk, and difficulty reconstructing supplier interactions.

Root Causes following the OPA framework:

- Manual handoffs with no automation; each step requires email monitoring and manual data re-entry
- No event-based escalation rules; delays depend on individual email habits
- Unclear SLAs with the supplier; response time expectations implicit, leading to inconsistent timelines
- Compliance and audit risk; approvals scattered across private inboxes; no centralized audit trail

Evidence: Average acknowledgment lead time 5 – 7 days (email wait + manual processing); 33% of acknowledgments arrive with incomplete/conflicting ship date info; 15 – 20% of POs experience > 7 day delays during peak periods. Email-dependent P2P processes experience 30 – 50% longer cycle times vs. system-integrated workflows. Audit failures commonly cite inadequate audit trails.

Impact: Delayed acknowledgments and approvals, copy-paste errors, compliance risk, bottlenecks during peak months, strained supplier relationships.

Part 3: To-Be Sub-Process Changes

Solution 1 Redesign: TRANSFORM and AUTOMATE Requisition Entry

Objective: To eliminate manual rework by enforcing structured, validated data capture.

This will be done through the introduction of our new system that will function similarly to the JIRA software in terms of the simplified workflow and communication between departments. This change aims to get rid of the back and forth email communication in favour of a centralized communications dashboard with real time updates and descriptions.

Change Set – Activities & Controls:

- **Add:** Pre-submission validation workflow requiring: material_code, quantity, delivery_date (≥3 business days forward), cost_center, specifications
- **Add:** Dynamic specification templates by material category (film, label, pallet, etc.) with pre-populated defaults and example values
- **Modify:** Automatic rejection if mandatory fields blank; requestor receives immediate notification with missing field list; no PC intervention required
- **Remove:** Manual PC data correction loop; replace with requestor self-service correction
- **SLA Control:** Requisition approval ≤4 hours from submission; Finance Director validates budget in parallel

New Data Fields:

- req_category (enum: film, label, pallet, other)
- partial_shipment_allowed (yes/no)
- rush_flag (yes/no with $250 cost adder)
- discount_codes (array of available codes)
- Eliminate free-text "Special Instructions"; replace with structured reason_codes

Role Reassignment:

- **Receiving Quality (RQ):** Now responsible for data accuracy before submission; self-corrects with system prompts
- **Purchasing Coordinator (PC):** Shifts from data correction to strategic review (supplier selection, volume consolidation, contract compliance)
- **Finance Director (FD):** Validates budget coding and cost center in parallel (concurrent approval, not sequential)

Business Impact:

- Incomplete requisitions reduce from 33% to < 5%
- Requisition-to-PO cycle time: 4.3 days → 2 days
- PC workload reduced by 40%; enables strategic supplier management
- Downstream Accounts Payable (AP) exceptions reduced through clean data

Solution 2: SIMPLIFY and AUTOMATE Communication

Objective: Replace email workflow with centralized, system-integrated supplier portal and event-triggered automation.

Change Set – Activities & Controls:

- **Add:** Cloud-based supplier acknowledgment portal integrated into ERP; PO automatically pushed to supplier dashboard
- **Add:** 48-hour boundary timers: 24-hour soft reminder ("Confirm by EOD tomorrow"), 48-hour escalation ("Escalated to manager; Finance review initiated")
- **Add:** Real-time status dashboard for PC/FD showing: PO status, acknowledgment receipt timestamp, committed ship date, escalation flags

- **Modify:** Acknowledgment capture; supplier enters structured form (PO number, ack_status, ship_date_commit, partial_qty, reason_codes) directly in portal
- **Remove:** Email as primary communication channel; replace with portal + automated in-app/SMS notifications
- **Remove:** Manual follow-up emails from PC; replace with event-based escalations

Change Set – Role Reassignment:

- **Supplier (External):** Logs into portal; views PO details; confirms acknowledgment with firm ship date within 48h; receives automated reminders
- **Purchasing Coordinator (PC):** Monitors real-time dashboard; escalates overdue POs; manages supplier SLA scorecard
- **Finance Director (FD):** Applies monthly penalties (2% invoice discount deduction) or incentive discounts (1% early-payment for ≥ 95% compliance)
- **Accounts Payable (AP):** Tracks supplier SLA compliance; receives auto-notification when receipt logged (no email); focuses on exceptions; uses supplier SLA context for exception resolution

Communication Restructuring and The Way Forward:

As-Is Issue	To-Be Solution & Impact
5 – 7 day ack lead time: informal supplier commitment	Portal forces structured acknowledgment within 48h; auto-reminders eliminate inbox delays; mandatory ship_date_commit field required
33% of acks missing/conflicting ship date info	Portal validation prevents submission without ship_date_commit and price_confirmed fields; error message returned if missing
PC manual follow-up workload; rework cycles	Automated 24h/48h timers replace email follow-ups; PC monitors dashboard
Lost messages, fragmented audit trail	All communications logged in system with timestamps; centralized in supplier interaction history; fully auditable; export-ready
Email bottleneck during peak months (Dec–Mar)	Event-based automation eliminates email processing delays; all suppliers receive simultaneous reminders; escalations occur at fixed times
Compliance risk (scattered approvals in private email)	Portal creates system-of-record; audit trail complete; 7-year retention; supports regulatory compliance

Business Impact:

- Acknowledgment cycle time: 5 – 7 days → 1 – 2 days
- Acknowledgment compliance: 30% → ≥ 85% (target)
- Email volume for P2P: 75% reduction (assumption)
- Audit-ready documentation; compliance risk eliminated

Part 4: Value and Simple Measures

KPI 1: SPEED

- **Definition:** Average business days from requisition submission to PO release
- **Baseline (As-Is):** 4.3 days (internal data, roots: 2.3-day rework + 1.5-day PC bottleneck + 0.5-day batching according to our assumptions)
- **Target (To-Be):** ≤ 2 days
- **Measurement:** ERP REQUISITION (req_submit_ts) vs PO (po_release_ts); monthly dashboard

KPI 2: QUALITY

- **Definition:** % of POs with firm acknowledgment (committed ship date) within 48 hours of PO dispatch
- **Baseline (As-Is):** 30% (estimated from email sampling; peak month Mar 2024: 74% delayed/incomplete)
- **Target (To-Be):** ≥ 85% (leadership mandate ahead of peak months); off-peak ≥ 75%
- **Measurement:** ERP PO_Ack table (ts_ack timestamp vs PO_dispatch_ts); daily automated report; rolled up monthly
- **SLA tied to KPI:** Suppliers < 85% compliance: 2% invoice discount deduction (monthly); ≥ 95% compliance: 1% early-payment discount (recurring)

KPI 3: TRANSFORM and AUTOMATE SUPPLIER RELATIONSHIP

- **Definition:** Average hours from PO dispatch to firm acknowledgment receipt
- **Baseline (As-Is):** 120 – 168 hours (5 – 7 business days)
- **Target (To-Be):** ≤ 36 hours (1.5 business days)
- **Measurement:** ERP PO_Ack.ts_ack minus PO_dispatch_ts; real-time dashboard; weekly supplier scorecard
- **Strategic value:** Enables production planning confidence; improves forecast accuracy

Supplier's Service Level Agreement (SLA) Framework

Responsibilities	Expectations	Measurement	Penalty/Accountability
Acknowledge PO with firm ship date	48 hours	Portal timestamp	2% invoice discount deduction if missed (recurring monthly)
Achieve ≥ 95% acknowledgment + ≥ 95% on-time delivery	Midweekly	Dashboard scorecard	1% early-payment discount; recognition in procurement newsletter
Provide partial shipment notice (if applicable)	24 hours	Portal reason_codes field	Contract escalation if missed
Progress with the training manual	Every week	Proficiency with the new system	Possible probation/dismissal

Part 5: Enabling IS and Implementation Feasibility

Five-Component IS Specification

Hardware: Cloud infrastructure (AWS/Azure), 20 barcode scanners (Receiving), 5 tablets (mobile app), 50 Mbps broadband, 15 workstations with dual monitors

Software (Recommended: Oracle NetSuite Procurement Cloud):

- Integrated supplier portal: SSO authentication, PO detail view, structured acknowledgment form, real-time notifications
- Event-triggered workflows: 24h/48h boundary timers, automated escalations, in-app + SMS alerts
- Real-time KPI dashboard: Acknowledgment rate, cycle time, invoice mismatch %, lead time by supplier
- Mobile app: Barcode scanning, receipt data entry, portal access
- Integration: REST APIs with JSON payloads; real-time sync (portal ↔ ERP); nightly reconciliation

Data (New Entities):

- **PO_Ack:** PO_ID, ts_ack, ship_date_commit, price_confirmed, partial_qty, reason_codes (all timestamped, auditable)
- **Supplier_Performance:** Monthly scorecard (ack_compliance_rate, on_time_delivery_rate, invoice_accuracy_rate, sla_status)
- **Message_Log:** Audit trail of all supplier communications (sender, recipient, message_type, timestamp, delivery_status)

Procedures (Streamlined Workflow):

1. **Requisition:** Requestor enters form → System validates → Auto-rejects if incomplete → Requestor corrects → FD validates budget in parallel → PC approves (strategic review only)
2. **PO Dispatch:** PC releases PO → Portal auto-pushes to supplier dashboard → System sends 24h reminder notification
3. **Acknowledgment:** Supplier fills portal form (ack_status, ship_date_commit, reason if partial) → Timestamp logged → Dashboard updates → At 48h if not acknowledged, escalation to supplier manager + PC alert
4. **Receipt:** Receiving staff scan barcode → Mobile app auto-syncs → System matches to PO/Ack → AP notified (no email) → Invoice processing begins

People (Role Evolution):

- **PC:** Removed: data correction. New: dashboard monitoring, escalation management, supplier SLA scorecard. Training: 2h system + 1h change management briefing
- **FD:** New: Parallel budget validation at requisition time (concurrent with PC approval, not sequential). Training: 1h workflow + 30m budget rules
- **AP:** Removed: email receipt tracking. New: Exception-focused (reconciliation, supplier issues). Training: 2h 3-way match automation + 1h SLA system
- **Receiving:** New: Barcode scanning + mobile app data entry. Training: 3h hands-on scanning + app navigation

- **Suppliers:** Onboarding: Pre-go-live 1h training per supplier (top 20 by spend); 24/7 helpline support month 1; phased rollout (waves 1 – 3, weeks 5 – 16)

Risks and Mitigation

Risk	Mitigation
Internal resistance	Executive sponsorship (CFO + CPO); early-adopter coalition; quantify time savings per role; quick wins in first 30 days; weekly "Ask Me Anything" sessions
Supplier adoption barriers	Phased onboarding (waves); dedicated account managers; simplified portal UX (3 required fields); sandbox training environment; incentive structure for early adopters; 24/7 helpline support (first 60 days)
Data quality & integration failures	Pre-migration audit (month 1); 4-week integration testing (weeks 3 – 6); daily reconciliation during parallel run; automated API monitoring; fallback to email-based process if portal unavailable
Steep learning curve	Role-based training modules; 1-week sandbox practice (5 scenarios); job aids + video tutorials (15-minute playlist); train-the-trainer model; dedicated helpline (month 1)
Peak month disruption	Go-live in off-peak month (June/July/Dec); 2 – 3 months stabilization before next peak; pre-peak stress test (38 POs/day simulation); supplier training completed 1 month before peak

Conclusion

Maple Heir's P2P transformation addressing incomplete requisitions and email bottlenecks through structured data validation and a cloud-based supplier portal will deliver the 85% acknowledgment target and substantial operational gains. By Month 4 post-implementation:

- **PO Cycle time:** 4.3 → 2 days
- **Supplier Acknowledgment compliance:** 30% → ≥ 85%
- **Invoice Mismatch:** 14% → < 5%
- **AP efficiency:** 12 → 6 – 8 min per invoice

Success depends on: phased supplier onboarding, executive sponsorship, comprehensive change management, and realistic risk mitigation. Oracle NetSuite Procurement Cloud (4 – 6 month implementation, $150K – $250K) provides the optimal balance of cost, speed, and user adoption. With disciplined execution, Maple Heir will achieve production planning visibility and strengthened supplier partnerships.

AS-IS BPMN 2.0 — Maple Heir P2P Process

Maple Heir — Procure-to-Pay (P2P) Project