

ExlAthena

The Supply Chain Brain

Decision intelligence for demand, inventory, production, network, and maintenance — on the ERP and MES fabric you already run.

SCOR

GSCF

APQC

SKOS

OKS

For supply chain & manufacturing leaders

Supplier

Plant

Lane

DC

Mumbai · Chennai · Kuala Lumpur

PLAN

Forecast, demand, inventory, production

RUN

GIS, PdM, diagnostics

DECIDE

Explainable next actions

CONTENTS

What this book covers

Written for people who run S&OP, planning, logistics, and plant reliability. The pages follow how work actually moves in a week — from the number you freeze, through cover and MPS, into lanes and assets, then into the decision you have to take.

HOW WE WORK WITH CLIENTS

We do not ask you to replace ERP or MES. We connect planning and live operations on one knowledge graph, then surface recommendations a planner can accept or override with the working shown.

Part A — Planning

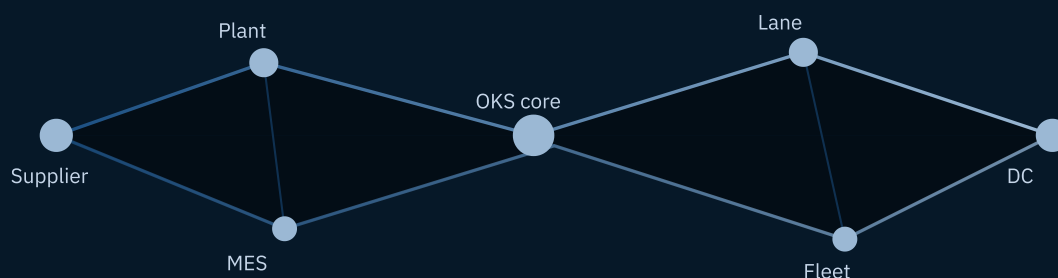
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KNOWLEDGE FABRIC

ERP · MES · Logistics · Assets — one graph



02 — SALES FORECASTING

Get the commercial number honest before S&OP freezes it

Most forecast fights are not about the model. They are about sales and supply working from different histories. We tie causal and statistical signals to the same order, shipment, and inventory feeds the plant already trusts.

WHAT WE HEAR IN THE ROOM

Region bias, promo lift that never lands, a locked baseline that died when a supplier slipped two days — and the sell-side number still sits in the deck.

One history for sales and supply

Continuous order and shipment feeds, not a month-end extract that is already stale by the review meeting.

Constraints next to the curve

Lead-time risk, delay scores, and capacity shortfalls sit with the forecast so consensus is not theatre.

Exception with a reason

When the number moves, planners see the drivers. That handoff feeds demand planning and later decisions.

EXAMPLE RECOMMENDATION

Revise Region West baseline -9% on promo SKU-220

Sell-in lag · DC stockout cascade

Orders -14% week on week

Promo lift overstated vs last three cycles

Downstream cover and demand plan at risk

Links forward. Forecast exceptions become inputs to demand planning (p.3) and the decision layer (p.8).

03 — DEMAND PLANNING

Turn forecast into a plan the plant can actually run

A demand plan that ignores BOM, routing, and work-centre capacity becomes an Excel rebuild by Thursday. ExlAthena keeps demand, buy, and make as one object on live ERP and MES feeds.

FAILURE MODE WE FIX

Signal lag, constraint blindness, and broken handoffs. Customer promises still assume the frozen plan is true.

Live fabric inputs

Orders, inventory, open POs, BOM, routing, work centres, supplier history, MES downtime — continuous, not extracts.

Shortfall scoring before you buy or make

Lead-time and capacity risk are visible before the PO is raised or the shift is loaded.

Clean handoff into inventory and MPS

The same plan object feeds optimisation and production, so each function is not re-keying the week.

EXAMPLE RECOMMENDATION

Pull-in alternate supplier on PO-441 for SKU-1842

Plan vs available -18% · cover below lead time

Primary fill rate -18%

BOM and capacity feasible on alternate

OTIF protection on top accounts

GIS matters here. Supplier and DC location belong in the same recommendation, not in a separate logistics file.

04 — INVENTORY OPTIMISATION

Cover without replenishment lead time is a vanity metric

Safety stock set years ago does not know today's open POs, MES downtime, or fill-rate drift. We recompute multi-echelon cover on plant–DC–line reality, then recommend expedite, reallocate, or wait.

TYPICAL WASTE

Excess in the wrong DC, air freight for a risk that was visible three weeks earlier, and days-of-cover reported without inbound lead time.

Manufacturing-first multi-echelon

Plant, DC, and line as the honest network surface. Safety stock and reorder points from live history.

Finite supply in every trade-off

Open POs, receipts, and alternates participate. Delay and capacity signals are first-class inputs.

Allocation when you cannot protect everything

Warehouse and supplier allocation with the cost of expedite versus stockout shown before write-back.

EXAMPLE RECOMMENDATION

Expedite DC-West; reallocate 2.4k from DC-Central

Cover 4.2 days · replen lead 11 days

Fill-rate drift on primary lane

Excess mapped at Central

OTIF at risk on priority accounts

Without GIS. Which DC and which lane is guesswork. Cover math needs place and ETA, not only quantity.

05 — PRODUCTION PLANNING

MPS and MRP that know the line may not be there

Frozen schedules fail when MES downtime, routing change, or asset risk stays outside planning. We plan on live line load and resequence before the shift burns a promise date.

SHIFT-START PATTERN

Hot job by phone, Press #4 vibration known only to maintenance, OTIF still assumes full Line B.

Live capacity and routing

Work centres and MES signals update the plan object. No twin Gantt in a shared drive.

PdM inside the schedule

Predicted degradation reshapes available hours before you overload the week.

Resequence with impact

See OTIF, cost, and capacity when you pull a batch forward or park a work order.

EXAMPLE RECOMMENDATION**Resequence Line B; park WO-881; protect WO-902**

Capacity –22% this shift · PdM window on Press #4

MES downtime pattern, last six shifts

Three accounts on promise risk

Alternate routing feasible for WO-902

Part B bridge. Production consumes PdM diagnostics and lane delays as constraints — same week, same brain.

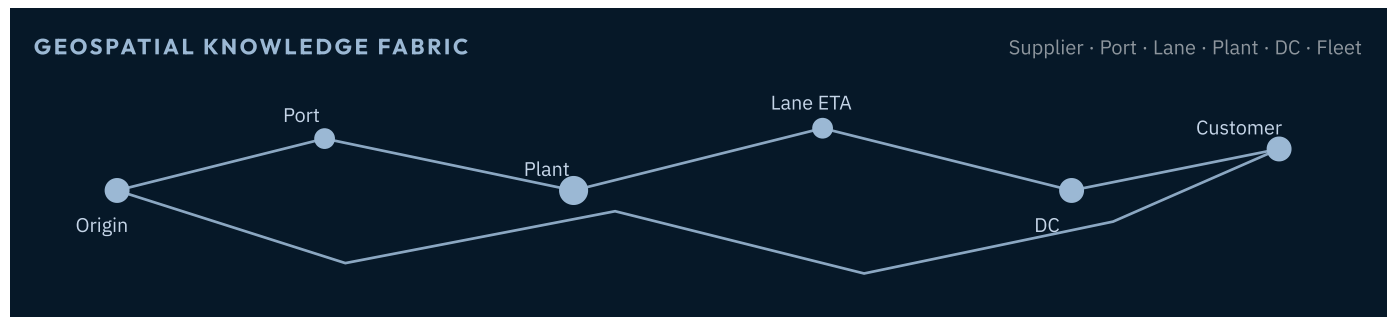
06 — GIS & GEOSPATIAL INTELLIGENCE

Your network is geographic. Manage it that way.

Suppliers, plants, DCs, ocean lanes, and fleet sit in space and time. GIS is a core operating layer in ExlAthena: ETA risk and exceptions land on a living network so cover and MPS inherit where the problem is.

WHY THIS IS NOT OPTIONAL

A red KPI with no port, no lane, and no plant–DC context produces bad expedite calls. Geography is constraint physics for OTIF, not decoration on a control-tower slide.



360° network on one graph

Nodes and edges for suppliers, plants, DCs, ships, fleet, and assets — spatially aware.

Ship and fleet in the plan

Ocean ETA risk and plant–DC exceptions feed inventory cover and production promises.

Control tower with place

From lane to line: every exception in geographic and operational context, ready for a decision.

EXAMPLE RECOMMENDATION

Reroute PO-778; primary port congestion; ETA +4.5 days

Lane risk · cover breach on six SKUs

Alternate port to DC-West, +1.2 days, feasible

Fleet leg: two trucks free in six hours

Reallocate or wait costed before approval

Bottom line. Plans that ignore lane physics invent OTIF misses. Geospatial intelligence keeps Part A plans survivable.

07 — PREDICTIVE MAINTENANCE & DIAGNOSTICS

Asset risk belongs in the same loop as the promise date

Rich PdM in the CMMS that never touches MRP still breaks OTIF. We tie remaining useful life and plant diagnostics into capacity, sequencing, and the same decision path as inventory.

SPLIT-BRAIN PLANT

Maintenance sees the vibration. Planning assumes full hours. Customer service holds a date both sides know is soft.

One diagnostics cockpit

Asset, cover, and schedule alerts in one stream — not three portals and a war-room spreadsheet.

RUL tied to capacity

Failure windows reshape available hours and which work orders you protect this week.

Physical AI on the floor

Vision, robotics, and MES signals join classic PdM on the knowledge graph.

EXAMPLE RECOMMENDATION

Open work order on Press #4; failure window 9–14 days

RUL 72% · Line B capacity –18%

Resequence before schedule freeze

Spare PO raised with lead time

Promise dates reviewed on affected SKUs

Decision layer. Open WO, resequence, or expedite spare — proposed with impact, approved by the owner of the plan.

08 — AI DECISION LAYER

A chart tells you what happened. This layer says what to do.

The decision layer is not a separate product. It closes Part A planning and Part B network/asset reality into explainable next actions — with human approval and write-back to the systems you already use.

DECISION FABRIC

Part A plan signals + Part B network/asset signals → one L5 action

ON PART A — PLAN

Forecast, demand, inventory, production

When the plan object breaks, you get an action, not another red cell.

- Revise or escalate a forecast exception
- Expedite an alternate supplier
- Reallocate stock across DCs
- Resequence MPS before the shift

ON PART B — RUN

GIS, PdM, diagnostics, network

When the physical world moves, the same engine proposes the fix.

- Reroute a lane or pull an alternate port
- Open a work order from an RUL window
- Protect promises under capacity loss
- Turn a fleet exception into cover action

Signals, model, threshold

Every recommendation shows why, so a planner can override without guessing.

Human in the loop by default

We propose. You approve. Nothing executes silently unless policy allows it.

Write-back that can be measured

Approved actions return to ERP/MES so the next cycle sees what changed.

OPERATING RULE

Same decision engine on planning and live ops

Governed · auditable · aligned to how you run S&OP

Stockout → expedite replenishment

Fill-rate drop → backup supplier

RUL → resequence + work order

Lane ETA → DC reallocate

09 — FRAMEWORKS & KNOWLEDGE FABRIC

Process standards you already run — on a living knowledge fabric

ExlAthena does not invent a parallel process religion. Operating decisions map to the frameworks supply chain teams already recognise, while SKOS and OKS keep the underlying graph consistent across sites.

SCOR

GSCF

APQC

SKOS

OKS

SCOR PROCESS SPINE

01
Plan02
Source03
Make04
Deliver05
Return

NETWORK ON THE FABRIC

Suppliers, plants, DCs, and lanes as linked entities — the same graph SCOR decisions ride on.



SCOR

Supply Chain Operations Reference

Plan → Source → Make → Deliver → Return, with Enable across the chain. Decisions and KPIs stay on this spine.

GSCF

Global Supply Chain Forum

Customer, internal, and supplier collaboration threads — so planning and logistics are not three disconnected meetings.

APQC

Process Classification Framework

Manage · Operate · Support taxonomy so stewardship and KPIs map to enterprise process catalogues.

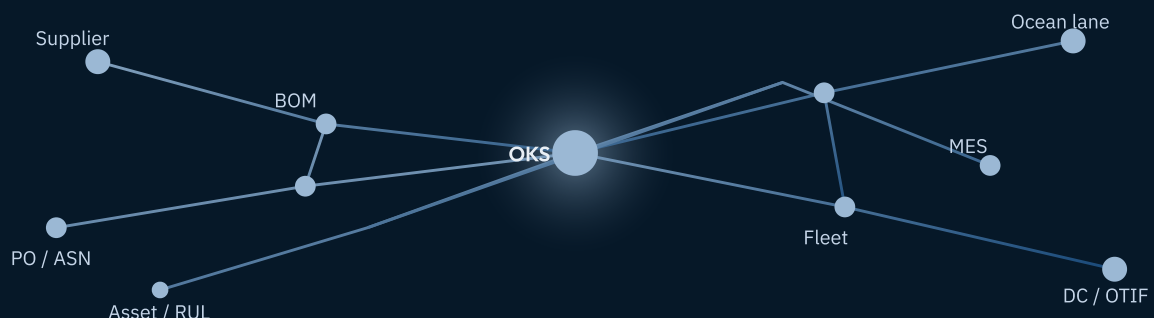
SKOS

Simple Knowledge Organization System

W3C patterns for concepts, labels, and hierarchies — material classes, exception codes, shared vocabularies.

OKS KNOWLEDGE FABRIC

Ontology & Knowledge System — entities, relations, constraints, rules



Note. SCOR, GSCF, APQC, and SKOS are industry references. ExlAthena supports work that follows them; this is not an official endorsement or certification mark of ASCM, GSCF, APQC, or W3C.

10 — REQUEST A WORKING SESSION

See it on your fabric

Book an enterprise demo or discovery workshop. We prepare against your stack and confirm details by email. The aim is a recommendation you recognise — not a generic slide walkthrough.

WHO SHOULD ATTEND

Supply chain lead, planning / S&OP, logistics or control tower, and one plant or maintenance owner if PdM is in scope.

60–90 minutes is enough for a first pass

We pick one thread across planning and run-time so the decision layer is visible end to end.

Follow-on

Scoped pilot on agreed SKUs, sites, or lanes — with success measures you define.

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EXLATHENA

From plan to lane to line — decisions with working shown.

The Supply Chain Brain for manufacturing enterprises. Demand, inventory, production, GIS, predictive maintenance, and governed next actions on one fabric — mapped to SCOR, GSCF, APQC, SKOS, and OKS.

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