Al-Bayrouty AI Roadmap

Sales Growth, Export Compliance and Factory Intelligence

A human-centric, cloud-based AI transformation roadmap powered by DeepSeek LLM

Prepared for Al-Bayrouty Management · 30 August 2026

Purpose

This document translates the CEO priority pain points — sales growth, complex export compliance and closer connection to the factory floor — into an integrated implementation roadmap. It uses cloud-based DeepSeek LLM services, human approval controls, verified regulatory sources and measurable business outcomes.

Critical design rule

AI may draft, retrieve, classify, summarize and flag risks. It must not independently certify regulatory compliance, sign export documents, release food batches, set binding prices, or make final safety, quality or employment decisions. Named Al-Bayrouty owners must approve each high-risk action.

1. Executive summary

The recommended programme is an integrated AI Operating System with three connected tracks: Sales AI to improve revenue generation and commercial execution; Export Compliance AI to reduce documentation and market-access risk; and Factory AI to improve production visibility, quality, traceability, maintenance and workforce support.

The immediate priority should be export-enabled sales: faster response to customers, accurate quotations, documented compliance for destination markets, and reliable confirmation that the factory can produce and ship the requested order. The project should begin with a controlled 12-week MVP, then extend traceability, regulatory intelligence and factory integration through week 16.

Business objectives — 12–16 week outcome

Objective	12–16 week outcome
Sales velocity	Faster quotation preparation, consistent customer responses and clear follow-up ownership.
Export readiness	A country-product-customer shipment checklist, approved-document workflow and exception escalation.
Regulatory resilience	A controlled regulatory-source register and change-alert process for priority markets.
Factory connection	Demand, inventory, production capability and traceability visible for sales and export decisions.
People and governance	Human approval, worker involvement, role-based access, audit trails and privacy safeguards.

2. The CEO pain points

Pain area	Current risk	AI OS response
Sales	Fragmented customer data, slow quotations, weak follow-up, limited forecasting and unclear account priorities.	Sales assistant, customer intelligence, quote workflow, pipeline alerts, demand forecasting and CEO dashboard.

Pain area	Current risk	AI OS response
Export process	Country-specific documents, certificates, labels and changing regulations create shipment delays and error risk.	Export case file, country-product checklist, document workflow, certification register, regulatory change alerts and audit trail.
Factory floor	Sales commitments may not reflect live inventory, capacity, quality or traceability status.	Production, inventory, quality and traceability interface with human-approved operational status.

3. Target operating model

Every export order should become a digital Export Case File. The file begins when a sales opportunity or customer order is created and closes only when shipment documentation, approvals and post-shipment evidence are complete.

Stage	AI-supported activity	Human owner
1. Opportunity	Retrieve product, customer, market and prior-order context; identify information gaps.	Sales representative
2. Quote	Prepare a draft quotation using approved price lists, product specifications, Incoterms and available-to-promise data.	Sales manager / finance
3. Compliance screening	Generate a destination/product/customer checklist from approved rules and documents; flag uncertainty.	Export compliance officer
4. Production feasibility	Check inventory, capacity, shelf-life, quality-release and packaging/label availability.	Planning and quality teams
5. Document preparation	Pre-fill approved templates and assemble evidence into the export case file.	Export documentation officer
6. Final release	Confirm documents, batch release, certificates and shipment approval.	Authorized signatories
7. Learning loop	Record delays, rejections, customer issues and regulatory changes for improvement.	Commercial / compliance lead

4. Workstreams

Sales AI

- Customer 360 view: order history, product mix, claims, payment terms and open opportunities.
- AI sales assistant: product specifications, certifications, availability and approved sales content.
- Quotation copilot: draft quote, required information checklist, versioning and approval workflow.
- Opportunity scoring: identify accounts with growth potential, churn risk and cross-sell opportunity.
- Demand forecast: rolling 30/60/90-day view by customer, market and product family.
- Executive dashboard: sales versus plan, pipeline, quote turnaround, order conversion and export status.

Export Compliance AI

- Export Case File with a unique shipment identifier and full audit trail.
- Destination-country/product/customer compliance checklist, with rule source and last reviewed date.
- Document checklist: commercial invoice, packing list, certificate of origin, health or phytosanitary evidence where applicable, certificate of analysis, halal/other certificates, transport and insurance documents as applicable.

- Certificate register: scope, issuing body, expiry date, renewal tasks, covered products and covered markets.
- Label and artwork control: approved version, market-specific requirements, allergens, language, nutrition and expiry/lot fields.
- Regulatory-change monitor restricted to verified official or authoritative sources; alerts create tasks for human review, not automatic rule changes.
- Pre-shipment traffic-light review: Green only after authorized human approval; Yellow requires corrective action; Red blocks shipment release.

Factory AI

- Production and inventory status for available-to-promise decisions.
- Batch, lot, shelf-life and finished-goods traceability.
- Quality-release status and nonconformity visibility.
- Maintenance and downtime observations to protect promised delivery dates.
- Digital SOP, HACCP and work-instruction assistant for authorized users.
- Human-centric worker feedback, training and escalation mechanisms.

5. 16-week delivery roadmap

Phase	Weeks	Primary deliverables
0. Mobilise	1	Executive sponsor, project team, scope, data-sharing rules, priority markets, success metrics and risk register.
1. Sales + export quick wins	2-4	Sales assistant, product/certificate knowledge base, quote template workflow, Export Case File, top-5-market checklist and document dashboard.
2. Core integrations	5-8	ERP/inventory connections, customer and product master-data cleanup, approval workflows, certificate register and pilot shipment testing.
3. Compliance intelligence	9-12	Verified-source regulatory monitor, labeling/artwork workflow, traceability lookups, management dashboard and user training.
4. Factory integration and scale decision	13-16	Selected production/quality data, mock recall, shipment readiness tests, benefits assessment, ROI report and scale-up plan.

Phase 0: Mobilise

- Appoint an executive sponsor, programme manager, sales lead, export-compliance lead, quality lead, factory planning lead, IT/security lead and finance representative.
- Select the first product families, customers and top five destination markets based on export revenue, volume, risk and strategic growth.
- Define what AI can do, what it cannot do, and which actions need approval.
- Agree baseline measures for quote time, documentation error rate, shipment delay, customer response time, sales conversion and traceability time.

Phase 1: Quick wins

- Load approved product catalogue, price lists, product specifications, customer requirements, certificates, SOPs and export templates.

- Build a simple sales/export workspace with search, draft responses, draft quotations, checklists and document-status visibility.
- Test the Export Case File on three historical shipments before using it for a live shipment.
- Run a live pilot on one export market, one product family and a limited number of shipments.

Phases 2–4: Control, integrate and scale

- Connect sales, ERP, inventory, production planning, warehouse and quality data using APIs or scheduled extracts.
- Use RAG retrieval so DeepSeek answers only from approved internal documents and verified regulatory evidence.
- Add certificate expiry alerts, country/product matrices, labeling approval and export readiness dashboards.
- Conduct a mock traceability and export-document audit before expanding to other markets.

6. Technical architecture

The recommended deployment is cloud-based DeepSeek inference accessed through a secure AI orchestration layer. The factory should not send unrestricted ERP databases, personal data or confidential commercial documents directly to the LLM.

Layer	Design requirement
User layer	Arabic/English web and tablet interface; role-based access for sales, export, quality, planning and management.
Application layer	Export Case File, workflow engine, document management, task alerts and dashboard.
AI orchestration layer	Prompt templates, redaction, retrieval, model routing, output validation, content filtering, logging and token monitoring.
Knowledge layer	Approved SOPs, product specifications, certificates, customer requirements, official regulatory sources and controlled templates.
Data integration layer	Read-only or controlled APIs to ERP, CRM, inventory, quality, warehouse and production systems.
DeepSeek cloud layer	Use general model for retrieval, drafting and summaries; use reasoning model only for complex analysis.
Trust layer	MFA, access controls, encryption, audit logs, retention policy, backup and incident response.

DeepSeek usage design

- Use DeepSeek as a language and reasoning component, not as the regulatory source of truth.
- Use retrieval-augmented generation: every answer must cite the internal approved document or verified external source it used.
- Use structured outputs for checklists, document fields, exceptions and approvals.
- Use caching for SOPs, product specifications and standard customer questions to reduce cost and inconsistency.
- Implement a cannot-verify response when evidence is unavailable or outdated.

7. Compliance and data controls

The platform must follow a controlled compliance workflow. Country requirements are legally sensitive, change frequently and may differ by product, ingredients, process, customer and shipment route. Therefore, regulatory monitoring must combine approved data sources, version control and qualified human validation.

Control	Implementation
Source governance	Maintain a source register of official regulators, customs authorities, standard-setting bodies, embassies/trade offices and approved customer requirements.
Rule ownership	Each market/product rule has an accountable export-compliance owner, effective date, review date and evidence link.
Document control	Use approved templates, version history, signer authority and immutable shipment archive.
Human approval	Only designated people may approve a Green shipment status, batch release, certificate submission or customer price.
Privacy	Minimise personal data sent to the AI layer; redact customer contacts, employee data and payment details where possible.
Auditability	Log query, source documents, model output, reviewer decision, changes and final document versions.
Fallback	If the AI service or integration fails, revert to approved manual procedures; never block food safety or legal escalation.

8. KPI framework

Area	KPI	Target after pilot
Sales	Quotation turnaround time	Reduce by 50-80% from baseline
Sales	Quote-to-order conversion	Improve from baseline; target set after data review
Sales	Follow-up completion	90%+ of overdue follow-ups assigned and closed
Export	Pre-shipment checklist completion	100% for pilot shipments
Export	Documentation errors detected before shipment	Increase initially; then reduce escape rate to near zero
Export	Shipment delays caused by documentation	Reduce from baseline
Export	Certificate expiry incidents	Zero
Factory	Traceability response time	Under 30 minutes in mock test
Factory	Available-to-promise accuracy	Improve from baseline
People	Training completion	90%+ of affected users
Governance	High-risk AI outputs reviewed by human	100%

9. Budget and financing view

The project should be funded in stages. Start with the sales and export MVP, prove adoption and measurable benefit, then fund deeper factory integration and scale-up. Cloud DeepSeek inference is expected to be a small operating-cost component; the principal costs are process design, data preparation, workflow/product development, integration, change management and compliance expertise.

Work package	Indicative cost (USD)	Notes
Sales + export MVP (weeks 1-4)	$20,000–$35,000	Knowledge base, workflows, basic UI, templates, checklist, initial training.
Core integrations (weeks 5-8)	$20,000–$35,000	ERP/CRM/inventory interfaces, master-data cleanup, approvals and certificate register.
Compliance intelligence + labeling control (weeks 9-12)	$15,000–$30,000	Source governance, alerts, artwork/document workflows and dashboard.
Factory/traceability integration (weeks 13-16)	$20,000–$40,000	Quality, batch/lot, selected production data, mock recall and final evaluation.
DeepSeek cloud API, first year	$1,000–$3,000	Usage-dependent; include monitoring and contingency.
Total 16-week programme	$76,000–$143,000	Scope-dependent, excluding major ERP replacement or new automation hardware.

Recommended commercial structure

- 30% paid by Al-Bayrouty as committed co-investment, released by milestones.
- Seek grant or Ministry/EU support for the public-interest components: export-readiness template, Industry 5.0 capability, workforce skills, traceability and replicable methodology.
- Use financing or supplier deferral for the remaining balance only after an approved scope, payment plan and measurable pilot acceptance criteria.
- Do not expand to all markets or all product lines until the first controlled market pilot meets agreed KPI and compliance gates.

10. Governance and team

Role	Accountability
CEO / executive sponsor	Business priority, resources, escalation and scale decision.
Commercial lead	Sales processes, customer requirements, pipeline and quotation adoption.
Export-compliance lead	Rules, certificates, document templates, final compliance review and regulatory escalation.
Quality / food safety lead	Batch release, specifications, HACCP, traceability and food-safety controls.
Planning / factory lead	Available-to-promise, capacity, production schedule and delivery feasibility.
IT/security lead	Architecture, access, integration, cybersecurity, backups and vendor management.
AI product/implementation lead	Configuration, RAG knowledge base, workflow design, testing and support.
Worker/superuser group	Usability feedback, training, frontline adoption and safe escalation.

11. Risks and mitigation

Risk	Mitigation
AI hallucinates a regulatory requirement	Only retrieve from controlled sources; require citations; human compliance owner validates all material requirements.
Outdated country rules	Effective dates, review dates, source monitoring and alert-driven human review.

Risk	Mitigation
Incorrect master data or certificate scope	Data-cleaning sprint, controlled owners, mandatory validation fields and expiry checks.
Staff treat AI output as final approval	Clear policy, training, UI warnings, approval gates and audit reviews.
Sensitive commercial/personal data leakage	Data minimisation, redaction, encryption, role access and vendor/data-processing review.
Integration delays	Begin with exports/CSV/API extracts; limit MVP integrations; use staged interfaces.
Scope becomes too large	Top five markets, one product family and priority customer cohort for the first pilot.
Low adoption	Sales/export superusers, daily support, visible quick wins and measured feedback.
Shipment disruption	Parallel run, historical testing, manual fallback and no automatic shipment release.

12. Decision requested

Approve a controlled 16-week Sales, Export Compliance and Factory Intelligence pilot, beginning with a four-week export-enabled sales MVP for AI-Bayrouty selected product family and five priority markets.

The first approval should authorize:

- Appointment of the AI-Bayrouty project team and named export-compliance owner.
- Access to approved product, customer, sales, certificate, export and operational documents.
- Selection of the first product family, five export markets and pilot customer cohort.
- A fixed-scope MVP budget and milestone-based payment structure.
- A controlled DeepSeek cloud deployment through a secure AI orchestration layer.
- A mandatory human approval workflow for all export, quality, pricing and shipment decisions.

First 10 working days

Day	Action
1–2	Kickoff, governance confirmation, success metrics, access plan and pilot-market selection.
3–4	Collect and classify product files, price lists, certificates, export templates, customer requirements and historic shipment documents.
5–6	Create initial controlled knowledge base and Export Case File schema.
7–8	Build sales/export assistant, draft quotation and compliance checklist workflows.
9	Test three historic export cases; identify data gaps and workflow exceptions.
10	Demonstrate MVP to CEO and functional owners; approve live pilot shipment criteria.

Positioning statement

AI-Bayrouty will use AI not merely to automate paperwork, but to connect commercial ambition with export compliance and factory reality. The result is faster, safer and more reliable market access — while keeping accountable people in control of every critical decision.