AI-POWERED MAINTENANCE MANAGEMENT SOLUTION

Intelligent Work Request Capture & Optimization

Prepared for: **OCP - Office Chérifien des Phosphates**

Value Strategy Consulting | February 2026

EXECUTIVE SUMMARY

THE CHALLENGE

- 50% of work requests incorrectly marked Priority 1
- Planners spend hours confirming material availability
- Heterogeneous workflow - no standardization
- Backlog poorly stratified and managed

OUR SOLUTION

- Intelligent field capture (voice + image → structured data)
- AI-powered planner assistant (80% time reduction)
- Automatic backlog optimization & prioritization
- Seamless integration with SAP PM

EXPECTED IMPACT

- **60-70%** reduction in planning time
- **40-50%** improvement in schedule adherence
- **Real-time** visibility of maintenance backlog

PROJECT OBJECTIVES

01 REDUCE ADMINISTRATIVE BURDEN

Free planners from repetitive data gathering. Enable focus on actual work optimization.

02 IMPROVE DATA QUALITY AT SOURCE

Capture structured information from field technicians in real-time using natural interfaces.

03 OPTIMIZE RESOURCE ALLOCATION

Intelligent prioritization considering materials, workforce, shutdowns, and production impact.

04 SUPPORT STANDARDIZATION EFFORTS

Align with JESA workflow standardization project. Build on best practices, not broken processes.

These objectives directly address the pain points identified across OCP's 15 plants

SCOPE: MVP FUNCTIONALITIES

1. INTELLIGENT FIELD CAPTURE

Technicians/operators use voice + images to report issues
AI structures data automatically (equipment TAG, failure mode, priority, spare parts)
Validation step before submission to planner

Eliminate unstructured emails • Reduce input errors • Capture rich context

2. AI-POWERED PLANNER ASSISTANT

Receives structured work request with context
Automatically validates material availability, workforce, shutdown schedule
Suggests realistic priority and resource requirements

80% reduction in planning time • Instant access to data • Consistent decisions

3. BACKLOG OPTIMIZATION

Stratifies backlog by reason (awaiting materials, shutdown, equipment)
Identifies work packages that can be grouped
Generates optimized schedule proposal considering all constraints

Clear visibility • Better execution • Reduced downtime

METHODOLOGY: PHASE 0

Readiness Assessment & Discovery

2-4 WEEKS

1 Organizational Readiness

- Evaluate maturity in Operational Excellence
- Assess digitalization readiness
- Validate AI readiness and data quality

2 Process Analysis

- Map AS-IS workflows (work requests → execution)
- Identify bottlenecks and time sinks
- Review JESA standardization project status

3 Data Audit

- Validate SAP PM data quality and completeness
- Check availability of manuals, BOMs, history
- Identify data gaps and remediation plan

4 Value Quantification

- Calculate baseline metrics (planning time, backlog)
- Estimate ROI and payback period
- Select optimal pilot site/equipment

DELIVERABLE: Readiness Report + Business Case + Pilot Plan + Refined Scope for Development

METHODOLOGY: PHASE 1

MVP Development & Testing

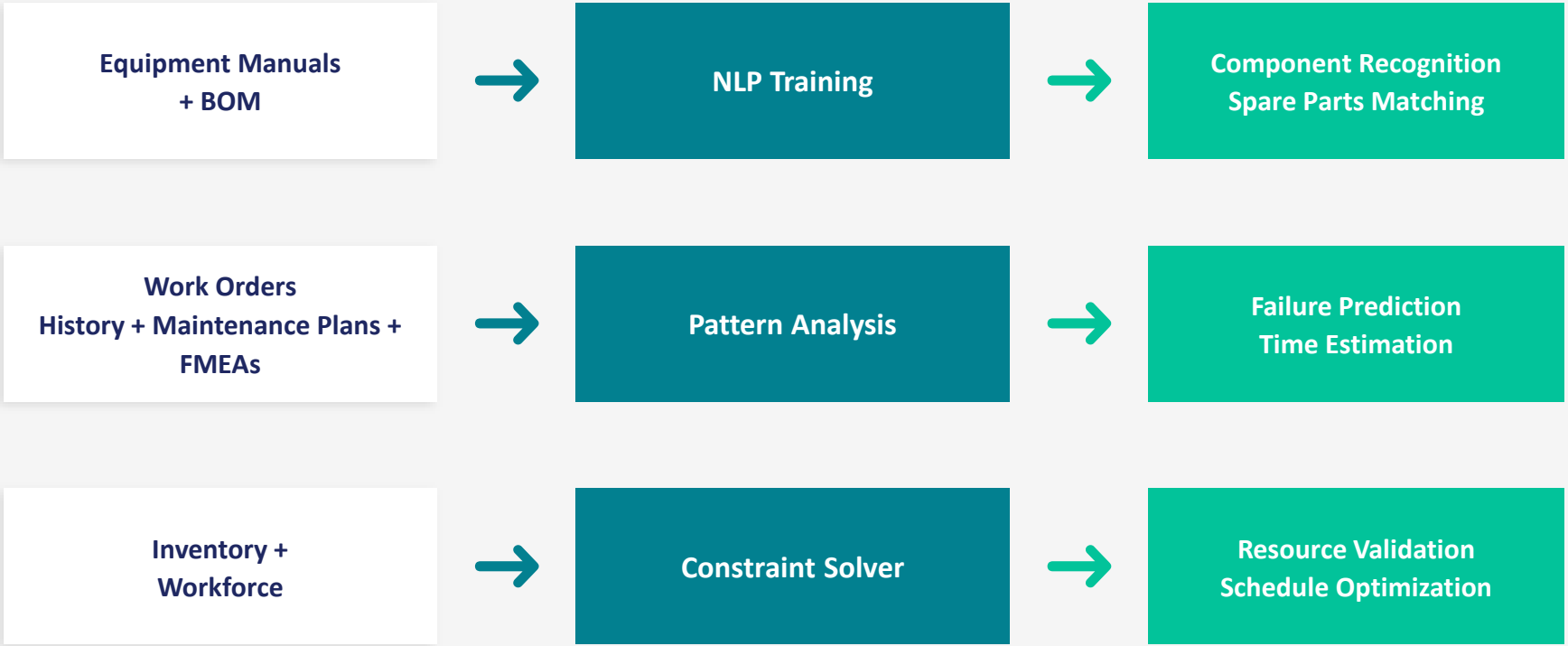
8-12 WEEKS

W1-2	**Data Collection**	→	*Critical documents (5)*
W3-4	**Core Architecture**	→	*Field capture + validation*
W5-6	**Planner Assistant**	→	*AI analysis engine*
W7-8	**Backlog Optimization**	→	*Scheduling algorithms*
W9-10	**Integration**	→	*SAP PM connection*
W11-12	**Testing & Training**	→	*User acceptance*

AGILE APPROACH: 2-week sprints • Weekly demos • Continuous client feedback • Iterative refinement

HOW WE USE THE DATA

Building the AI Foundation



Every document serves a specific purpose in training, validation, or execution

DOCUMENT COLLECTION STRATEGY

CRITICAL
Week 1-2

- Equipment hierarchy (SAP)
- Work orders history (12 months)
- Spare parts BOM
- Current inventory
- Maintenance backlog

→ Start development

IMPORTANT
Week 3-4

- Technical manuals
- PM plans
- Workforce availability
- Shutdown calendar
- Production schedule

→ Refine algorithms

DESIRABLE
Week 5-6

- FMEA/RCM
- Component photos
- Condition monitoring
- Cost references
- Workflow documentation

→ Optimize

• Pragmatic approach: Good data fast > Perfect data late
• Dummy data can fill gaps initially

DEVELOPMENT ROADMAP

PHASE 0

Assessment

2-4 weeks

PHASE 1

MVP Development

8-12 weeks

PHASE 2

Pilot Deployment

4-6 weeks

DETAILED TIMELINE

MONTH 1	Readiness assessment • Data collection (critical docs) • Pilot site selection
MONTH 2	Field capture development • Planner assistant core • Important docs collection
MONTH 3	Backlog optimization • SAP integration • Testing & training
MONTH 4	Pilot deployment • User feedback • Refinement & optimization

TOTAL TIMELINE: 16-24 weeks from kickoff to pilot in production

EXPECTED BENEFITS

60-70%

Reduction in planning time per work request

From 30-45 min → 10-15 min

40-50%

Improvement in schedule adherence

Better resource allocation & prioritization

80%

Reduction in priority misclassification

AI-validated priorities vs historical data

30-40%

Faster work request processing

Structured data from source eliminates rework

ADDITIONAL QUALITATIVE BENEFITS

- Real-time visibility into maintenance backlog status
- Standardized workflow supporting JESA initiatives
- Reduced reliance on tribal knowledge
- Better data quality for future analytics
- Improved planner satisfaction & focus
- Foundation for predictive maintenance expansion

RISK MITIGATION

⚠ Data Quality Issues

Mitigation:
Phase 0 assessment validates data completeness
Dummy data generation for gaps
Iterative data quality improvement

⚠ User Adoption Resistance

Mitigation:
Co-design with end users from day 1
Weekly demos and feedback loops
Comprehensive training program

⚠ Integration Complexity

Mitigation:
SAP PM integration expertise in team
Read-only access first, then write
Thorough testing in sandbox environment

⚠ Scope Creep

Mitigation:
Clear MVP definition and sign-off
2-week sprint boundaries
Change request process for additions

⚠ JESA Alignment Mismatch

Mitigation:
Early coordination with JESA team
Flexible workflow configuration
Support for multiple workflow versions

⚠ ROI Not Achieved

Mitigation:
Baseline metrics established in Phase 0
Monthly impact measurement
Adjustments based on actual usage data

TECHNOLOGY STACK

USER INTERFACE

- Mobile app (React Native) - Field capture
- Web dashboard (React) - Planner interface
- Responsive design for all devices

AI & ANALYTICS

- Claude Sonnet 4 - NLP & reasoning
- Computer vision - Image analysis
- Optimization algorithms - Scheduling

BACKEND SERVICES

- Node.js / Python - API services
- PostgreSQL - Application database
- Redis - Caching layer

INTEGRATION

- SAP PM APIs - Bidirectional sync
- PI System connector - Real-time data
- REST APIs - Future extensibility

Modern, scalable, enterprise-grade architecture • Cloud-ready • Secure by design

OUR TEAM & EXPERTISE

Mining & Industrial

- 15+ years in mining operations
- Maintenance optimization specialist
- Asset management frameworks

AI & Software

- Advanced AI/ML implementations
- Full-stack development team
- Enterprise integrations (SAP, etc.)

Process Excellence

- Alignment with INCIT's AIRI AI Readiness Framework for assessment methodology
- Workflow standardization
- Change management expertise

INVESTMENT FRAMEWORK

PHASE 0: Assessment

Duration:
2-4 weeks
Scope:
- Readiness assessment
- Process mapping
- Data audit
- Business case & ROI

Pricing:
Separate fee (detailed proposal follows)

PHASE 1: Development

Duration:
8-12 weeks
Scope:
- Complete MVP development
- SAP PM integration
- Testing & training
- Pilot deployment support

Pricing:
Fixed price based on refined scope

VALUE PROPOSITION

✓ Transparent, phased approach reduces risk
✓ Assessment validates ROI before full development
✓ Fixed-price model for predictable budgeting
✓ Competitive rates vs. international consultancies
✓ Customized solution (not off-the-shelf software)

SUCCESS CRITERIA

EFFICIENCY

- Average planning time reduced by >60%
- Work request processing time <15 min
- Schedule creation time reduced by >50%

QUALITY

- Priority accuracy >90% vs baseline
- Material availability validated before planning
- Data completeness >95% in structured requests

ADOPTION

- User satisfaction score >4/5
- Field capture usage >80% of requests
- Planner assistant usage in 100% of workflow

BUSINESS IMPACT

- Schedule adherence improvement >40%
- Backlog visibility in real-time
- ROI positive within 12 months

Metrics established during Phase 0 • Monthly tracking • Adjustments based on actual data

NEXT STEPS

1. Review and align on objectives & scope
2. Approve Phase 0 (Assessment) proposal
3. Designate OCP project team & pilot site
4. Kickoff meeting & data collection plan
5. Begin readiness assessment (Week 1)

TARGET: Begin Phase 0 in **March 2026**

TRANSFORM MAINTENANCE MANAGEMENT WITH AI

Let's build the future of maintenance together

Value Strategy Consulting

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