Business case
Production Knowledge Assistant

Net Profit: €4.62M | IRR: 583% | Payback: 2 months

Executive Summary

This business case analyzes the financial impact of implementing an AI-powered Production Knowledge Assistant for a mid-size Belgian manufacturing facility with 300 production operators.
The system provides instant answers to operator questions, reducing search time from 15 minutes to 10 seconds—a 99% reduction in time wasted searching for information.

Problem Statement

Production operators at manufacturing facilities waste significant time searching for information in SOPs (Standard Operating Procedures), safety manuals, maintenance guides, and quality documentation. This search time represents direct productivity loss and increases the risk of errors due to outdated or incorrect information being used.

Current State Analysis

Typical information search process:

- Operator encounters question (equipment setting, safety procedure, quality spec)
- Walks to supervisor office (5 minutes)
- Supervisor searches physical binders or shared drive (10 minutes)
- Operator returns to workstation (5 minutes)

Total time lost: 20 minutes per question

Quantified Impact

Metric	Value
Number of operators	300
Questions per operator per day	3
Time per question (current)	15 minutes
Daily time wasted	13,500 minutes (225 hours)
Annual time wasted	56,250 hours
Average labor cost (fully loaded)	€40/hour
Annual productivity loss	€2,250,000

Proposed Solution

Deploy an AI-powered knowledge assistant that provides instant answers to operator questions via mobile-friendly interface (smartphone, tablet, or kiosk). Key features:

- 10-second response time (vs 15 minutes currently)
- Trained on 500+ company documents (SOPs, manuals, procedures)
- Multi-language support (Dutch, French, English)
- Works offline (critical documents cached locally)
- Mobile-friendly (accessible from production floor)
- Confidence scoring (escalates complex questions to experts)
- Audit trail (tracks all questions and answers)

Financial Analysis

Component	Cost (€)	Notes
Discovery & Design	15,000	Process mapping, document collection
AI Development	50,000	Model training, interface development
Integration	12,000	ERP/MES integration, mobile deployment
Testing & Training	8,000	Pilot program, user training
Total Implementation	**85,000**	**One-time investment**
Annual Hosting	48,000	€4,000/month (AWS/GCP)
Annual Support	12,000	Updates, improvements, support
Total Annual	**60,000**	**Recurring operational cost**

Savings Calculation

Metric	Current	With AI	Improvement
Time per question	15 minutes	10 seconds	99.0%
Questions answered/day	900	900	-
Daily time spent	13,500 minutes	150 minutes	98.9%
Annual hours saved	-	55,900	-
Annual labor cost saved	-	€2,236,000	-
Remaining manual time	-	€56,000	Complex escalations
Net annual savings	-	€2,180,000	-

Note: This analysis assumes 80% adoption rate in Year 1, resulting in actual savings of €1,744,000 in Year 1. Conservative estimate accounts for learning curve and edge cases.

3-Year Financial Projection

Year	Ivestment	Operating cost	Savings	Net Benefit	Cumulative
Year 1	€85,000	€48,000	€1,392,000	€1,259,000	€1,259,000
Year 2	€0	€60,000	€1,740,000	€1,680,000	€2,959,000
Year 3	€0	€60,000	€1,740,000	€1,680,000	€4,639,000
Total	**€85,000**	**€168,000**	**€4,872,000**	**€4,619,000**	

Return on Investment Metrics

Metric	Value	Benchmark
Payback Period	1.8 months	Excellent (<12 months)
3-Year NPV (10% discount)	€3,961,000	Highly Positive
Internal Rate of Return (IRR)	583%	Far exceeds hurdle rate
Return on Investment (ROI)	2,087%	Over 3-year period

All prices in this business case are indicative and ex-VAT. This is not a quote. Prices are subject to change.

Risk Analysis

Risk	Likelihood	Impact	Mitigation
Low adoption rate	Low	High	Pilot program, champion users, training
AI accuracy issues	Medium	Medium	Confidence scoring, human escalation, continuous improvement
Integration challenges	12,000	Low	Standard APIs, proven technology
Change resistance	Medium	Medium	Executive sponsorship, clear communication, quick wins
Technical issues	Low	Medium	Cloud hosting (99.9% uptime), redundancy, support

Success Metrics

Key performance indicators (KPIs) to track:

Metric	Target	Measurement
Adoption rate	>80% in 90 days	% of operators using daily
Response accuracy	>95%	User ratings, expert validation
Time savings	>90% vs baseline	Before/after time studies
User satisfaction	>4.5/5 stars	Monthly user surveys
Cost savings realized	>€1M in Year 1	Actual time saved × labor cost

Recommendation

Based on the financial analysis, we strongly recommend proceeding with the Production Knowledge Assistant implementation.

Key decision factors:

- Exceptional ROI: 623% IRR far exceeds any typical hurdle rate
- Fast payback: Investment recovered in 1.5 months
- Low risk: Fixed-price implementation, proven technology, pilot de-risks
- Quick implementation: 8 weeks from kickoff to full deployment
- Immediate impact: Savings begin accruing in Week 6 (pilot)
- Scalable: Easy to expand to other facilities after proving success

The combination of exceptional financial returns, low risk, and fast implementation makes this a clear opportunity for immediate value creation.

Next Steps

Step	Owner	Timeline
Review and approve business case	CFO / Operations Director	Week 1
Allocate budget (€65K)	Finance	Week 1
Select pilot facility/line	Operations	Week 1
Kick off discovery phase	Sprint AI + Operations	Week 2
Complete pilot deployment	Sprint AI	Week 6
Measure pilot results	Operations	Week 6-7
Full rollout decision	Executive Team	Week 7
Select pilot facility/line	Sprint AI	Week 8

Let's talk.

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For questions about this business case or to schedule a discovery call, please contact us directly.

Sprint > AI

ACCELERATING AI INNOVATION