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Part 1: Management summary

# Legacy Check – Example report

## LVS/400 · Muster Logistik GmbH (fictional)

Analysis of an RPG and COBOL application with Db2 on IBM i  
(AS/400)

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Prepared by neocoding.ai · neocor cloud UG (haftungsbeschränkt)  
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## The situation

**Muster Logistik GmbH (fictional)** – Contract logistics and freight forwarding company with 320 employees, four sites and three warehouses with a total of 42,000 pallet spaces.

LVS/400 has been running on IBM midrange systems (formerly AS/400, now IBM i) since 1995 and has been extended continuously by the in-house IT team. The system is extremely stable – but both RPG developers retire in 2027 and 2029, and the search for a successor has been unsuccessful for over a year. At the same time, customers demand real-time interfaces; two tenders were lost in 2026 for that reason. Management wanted to know how to make the system future-proof without putting operations at risk.

640,000

lines of code

1,051

programs

1,020

tables (files)

312

screens

|                     |                                                                                                                                                   |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Language / platform | RPG III, RPG IV (ILE), COBOL/400 and CL on IBM i 7.3, Power8 server                                                                               |
| Size                | 1,051 programs, approx. 640,000 lines of code, 312 screens (5250)                                                                                 |
| Database            | Db2 for i · 1,020 physical and 1,870 logical files, mostly described with DDS, 410 GB                                                             |
| Interfaces          | EDIFACT with 60 customers via an EDI converter, customer portal via nightly FTP export, route planning and financial accounting via file exchange |
| Usage               | 180 users at 4 sites, 64 handheld scanners with terminal emulation                                                                                |
| Development         | 2 in-house RPG developers (aged 61 and 64); source code without version control; no automated tests                                               |
| Operations          | System administration by an external IBM i partner; backup to tape, disaster recovery site under contract                                         |
| Documentation       | Help texts in the screens, database description from 2009                                                                                         |

### Goals

- Assess staffing and operational risks
- Meet customer demands for real-time interfaces
- Find a viable path for the next 10 years – without a big bang

### Scope of the Legacy Check

**Fixed price €2,499 net** · Completed within 2 calendar weeks

- Analysis of the complete source libraries and database descriptions (no live data)
- AI-assisted code analysis with the right model for each task and proven prompts, all findings reviewed by experienced developers
- Two interviews: business department (warehouse and dispatch) and IT
- Review of system, authorities, operations, interfaces and licences
- Results presentation (online, 60 minutes) and this report

## Overall assessment

### Stable core, acute staffing risk

LVS/400 is extremely stable and maps the processes precisely – especially the customer-specific billing. The IBM i platform is being developed further by IBM and is not the problem. The problems are staffing and interfaces: the knowledge sits with two developers close to retirement, and without real-time interfaces the company is already losing business. We recommend first placing interfaces in front of the legacy system and then replacing the modules step by step.

### Traffic-light rating

| AREA                           | RATING                                      | REASON                                                                                                       |
|--------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Knowledge & staffing           | <span style="color: red;">●</span> Red      | Both RPG developers retire in 2027 and 2029; no successor found; approx. 60 of 380 billing rules documented. |
| Integration & interfaces       | <span style="color: red;">●</span> Red      | No real-time interfaces, only nightly file exports; two tenders lost in 2026 as a result.                    |
| IT security                    | <span style="color: orange;">●</span> Amber | Terminal and FTP unencrypted; 38 profiles with full access to all objects; security level 30 instead of 40.  |
| Operations & infrastructure    | <span style="color: orange;">●</span> Amber | Very high availability; but IBM i 7.3 without standard support, hardware maintenance ends in 2027.           |
| Maintainability & code quality | <span style="color: orange;">●</span> Amber | Consistent business logic, but 22% RPG III, much GOTO and indicator logic, 1,240 hard-coded customer rules.  |
| Database & data                | <span style="color: orange;">●</span> Amber | Well-maintained data; but no referential integrity, 6-digit date fields, fields without a character set ID.  |
| Technology outlook             | <span style="color: orange;">●</span> Amber | IBM i is being developed further, but the application hardly uses it: 5250 screens, DDS, no APIs.            |
| Business fit                   | <span style="color: green;">●</span> Green  | Fully covers warehouse, transport and billing; very stable; billing as a strength.                           |

### The five biggest risks

| NO. | RISK                                      | RATING                                                                                 | ACTION                                                                                        |
|-----|-------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| R1  | Loss of knowledge through retirement      | <span style="background-color: red; color: white; padding: 2px 5px;">CRITICAL</span>   | Start the knowledge transfer now, document core programs, external IBM i support as a bridge. |
| R2  | Missing real-time interfaces              | <span style="background-color: orange; color: white; padding: 2px 5px;">HIGH</span>    | REST interfaces in front of LVS/400 for shipment status and order intake.                     |
| R3  | Platform at end of support                | <span style="background-color: orange; color: white; padding: 2px 5px;">HIGH</span>    | IBM i 7.5 or 7.6 on new hardware or hosted – as a bridge for the migration period.            |
| R4  | Unencrypted connections, excessive rights | <span style="background-color: orange; color: white; padding: 2px 5px;">HIGH</span>    | TLS for terminal sessions, SFTP, authorisation concept, security level 40.                    |
| R5  | Customer rules hard-coded                 | <span style="background-color: #c47a3b; color: white; padding: 2px 5px;">MEDIUM</span> | Document the rules and map them as configuration in the new system.                           |

## The options compared

| OPTION                                                                 | EFFORT WITHOUT AI    | DURATION WITHOUT AI | SAVING WITH AI | ASSESSMENT                                 |
|------------------------------------------------------------------------|----------------------|---------------------|----------------|--------------------------------------------|
| A · Secure the platform and the knowledge                              | 90–120 PD            | 4–6 months          | 30–40%         | Essential as a bridge                      |
| B · Modernise on IBM i                                                 | 750–950 PD           | 31–40 months        | 55–65%         | Possible, but the staffing problem remains |
| C · Add interfaces first, then replace module by module<br>recommended | 1,040–1,310 PD       | 40–45 months        | 40–50%         | Recommended (after option A)               |
| D · Standard software for warehouse and forwarding                     | high (plus licences) | 22–30 months        | approx. 20%    | Only sensible for parts                    |

Effort and duration estimated without AI. Our AI-assisted development reduces time and cost by the range shown; the roadmap already includes AI.

## Recommendation

We recommend first securing the platform and the knowledge (option A), then placing interfaces in front of LVS/400 and replacing it module by module (option C). The interfaces benefit customers immediately and form the foundation of the new application.

| PHASE                        | TIMEFRAME    | CONTENT                                                                                                                | EFFORT     |
|------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------|------------|
| Phase 1: Bridge and security | Months 1–4   | IBM i 7.5 or 7.6, encryption and authorities, disaster recovery test, Git, start of the knowledge transfer             | 60–80 PD   |
| Phase 2: Interface layer     | Months 3–8   | REST interfaces for shipment status and order intake, real-time customer portal, document data model and billing rules | 110–140 PD |
| Phase 3: Modular replacement | Months 8–26  | Warehouse with mobile data capture, order intake, dispatch, billing; data migration to PostgreSQL per module           | 420–520 PD |
| Phase 4: Shutdown            | Months 26–30 | Take over remaining functions, archive legacy data in an audit-proof way, switch off IBM i                             | 40–60 PD   |

All four phases: 630–800 PD over approx. 30 months with AI – approx. 1,130–1,430 PD without AI. Accuracy ±25%. Hardware, hosting and licences not included.

## Next steps

1. Discuss the results with management, IT and warehouse management
2. Commission phase 1 and start the knowledge transfer of both developers immediately
3. Select pilot customers for the new shipment status interface
4. Detailed planning and fixed-price proposal for phase 2

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