

LAB NOTEBOOK SELF-ASSESSMENT WORKBOOK

Requirements Gathering & Strategic Alignment

This self-assessment workbook is designed to help R&D; and Digital R&D; leaders translate their operational requirements into a structured, vendor-neutral specification before engaging with electronic lab notebook (ELN) suppliers. Answer the questions in each section to establish clear team priorities prior to product demonstrations.

0. Quick Check (Industry Hygiene Baseline)

(Please put a checkmark or cross inside the brackets)

- [] Uptime and 24/7 access (SaaS hosting baseline)
- [] Basic internal collaboration (sharing protocols & document access control)
- [] Basic keyword search (ability to query historical files and text entries)

1. Ambition (Data Architecture Commitment)

Identify your long-term scientific data strategy:

(Please put a checkmark or cross inside the brackets)

- [] **Find-and-Preserve:** Primarily want to easily retrieve prior work and ensure intellectual property is safely archived. Focus is on search index and storage reliability.
- [] **Aggregate-and-Model:** Plan to eventually merge historical records across multiple experiments to construct predictive models, populate BI dashboards, or deploy AI-assisted analysis. Focus is on structured, schema-enforced fields.

Determine priorities for data commitment requirements:

(For each item below, please write a Priority number from 1 to 5 inside the brackets; NO ticks/crosses here)

Requirement Category	Priority (1–5)	Notes / Target Configurations
Architecture (binder / canvas / compliance)	[]	Binder-style is frictionless but unstructured; schema-enforced compliance is searchable but rigid.
Terminology and format enforcement	[]	Ensures compound names (e.g. 'ethanol' vs 'EtOH') and units are standardized automatically.

2. Daily Workflow Orientation

Identify where the bulk of your experimental volume and operational pain points sit in R&D;:

Choose one dominant strategy:

(Please put a checkmark or cross inside the brackets)

- ☐ **Discovery & Hypothesis:** Narrative-driven, early-stage, exploratory research. Context and judgment matter as much as data points.
- ☐ **Samples & Tests:** Throughput-driven workflows. Running test protocols, tracking samples, and capturing device outputs against compliance trails (LIMS-oriented).
- ☐ **Ingredients & Products:** Recipe- or formulation-driven. Iterating ingredient ratios against strict specifications, cost targets, and regulatory thresholds.
- ☐ **Genuine Blend (Specify):** _____

Determine priorities for orientation requirements:

(For each item below, please write a Priority number from 1 to 5 inside the brackets; NO ticks/crosses here)

Requirement Category	Priority (1–5)	Notes / Target Configurations
Enterprise system connectivity (PLM, LIMS, ERP)	☐	Formulation systems require PLM/ERP interfaces; sample testing requires LIMS integrations.
Template flexibility	☐	Discovery labs demand loose text entry; regulated quality labs require locked schemas and templates.
Instrument and equipment data capture	☐	Direct extraction of raw instrument readouts to eliminate manual transcription and typing error.

3. Regulatory Compliance & Organizational Exposure

Define external regulatory requirements and compliance boundaries for your laboratory:

Identify all active organizational constraints:

(Please put a checkmark or cross inside the brackets)

- ☐ Our laboratory operates in a formally validated **GxP / GMP / GLP** environment.
- ☐ Our intellectual property is highly sensitive, requiring cell-by-cell change verification and robust proof-of-custody.
- ☐ We routinely collaborate and share active protocols with external CROs, contract labs, or regulators.

Determine priorities for compliance requirements:

(For each item below, please write a Priority number from 1 to 5 inside the brackets; NO ticks/crosses here)

Requirement Category	Priority (1–5)	Notes / Target Configurations
Audit depth (page / cell-by-cell)	☐	Reconstruct exactly who changed what, when. Essential for GxP, GLP, and IP-sensitive chemistry.
Validation burden (IQ/OQ/PQ support)	☐	GMP environments require validated releases and installation/operational packages from the supplier.
Multi-tenancy and data isolation	☐	Ensures different client groups or external CRO partners can never access overlapping databases.
External access governance	☐	Granular permissions to share specific folders or records with external contract manufacturing networks.
Workflow orchestration and review	☐	Enforces sequence protocols, electronic signatures, and multi-tier reviews (PI, QA sign-off).

4. Vendor, Security & Commercial Requirements

Evaluate security, infrastructure, and contract parameters. Hand IT-related rows off to IT for assessment, while R&D; defines workflow criteria.

Determine priorities for business and infrastructure requirements:

(For each item below, please write a Priority number from 1 to 5 inside the brackets; NO ticks/crosses here)

Evaluation Criteria	Priority (1–5)	Notes / Special Instructions
API and extensibility	[]	Provides programmatic capability to integrate notebook records with Python, KNIME, or external LIMS.
Data export and portability	[]	Ensures a full-fidelity exit path (including audit trails and attachment logs) if changing suppliers.
UI feel (canvas, form, or grid)	[]	Directly impacts daily researcher adoption; a modern, responsive layout prevents workaround spreadsheet sprawl.
Vendor roadmap	[]	Indicates forward-looking software development velocity, though roadmaps are targets rather than guarantees.
Security certifications	[]	Requires audited third-party reports (e.g. SOC 2 Type II or ISO 27001) rather than just self-attestation.
Data residency & GDPR	[]	Restricts data physically to specific geographic regions (such as region-locked EU hosting for GDPR compliance).
SSO and identity federation	[]	Integrates notebook access with corporate directory accounts (Azure AD/Okta) rather than creating local accounts.
Ecosystem lock-in	[]	Analyzes how tightly software is wired to a specific technology suite (e.g., deep native Microsoft integrations).
Price and contract terms	[]	Defines total cost of ownership over a 3-to-5-year horizon, accounting for onboarding fees and support tiers.
Vendor viability	[]	Confirms supplier backing (financial funding, client base) to guarantee long-term database security.
Support quality & SLA	[]	Establishes technical response timelines and dedicated support hours during live lab production.

5. Add-on Capabilities (Domain-Specific Extensions)

Determine deployment strategies for optional, domain-specific modules. Select whether these features should run natively in the notebook, as integrated bolted-on extensions, or through separate specialized tools.

Select one strategy per capability:

(Please put a checkmark or cross inside the brackets)

Capability Module	Native Mode	Bolted-on	Separate Tool	Not Needed
Inventory management	Native []	Bolted []	Separate []	Not Needed []
Design of experiments (DOE)	Native []	Bolted []	Separate []	Not Needed []
Analytics (basic to advanced)	Native []	Bolted []	Separate []	Not Needed []
Visualization (basic to advanced)	Native []	Bolted []	Separate []	Not Needed []
Reporting & CAPA dashboards	Native []	Bolted []	Separate []	Not Needed []
Cheminformatics / bioinformatics	Native []	Bolted []	Separate []	Not Needed []
Domain-specific tools	Native []	Bolted []	Separate []	Not Needed []
Sample management & lineage	Native []	Bolted []	Separate []	Not Needed []
Voice & hands-free data capture	Native []	Bolted []	Separate []	Not Needed []
Built-in GenAI facilities	Native []	Bolted []	Separate []	Not Needed []
Custom capability 1: _____	Native []	Bolted []	Separate []	Not Needed []
Custom capability 2: _____	Native []	Bolted []	Separate []	Not Needed []
Custom capability 3: _____	Native []	Bolted []	Separate []	Not Needed []
Custom capability 4: _____	Native []	Bolted []	Separate []	Not Needed []
Custom capability 5: _____	Native []	Bolted []	Separate []	Not Needed []
Custom capability 6: _____	Native []	Bolted []	Separate []	Not Needed []