

# No-Code Deployment of Library ContractPro System: Practical Experience and Impact

Case Providing Department: Library  
Supported by LM

## 1. Background

As the university's central resource hub, our library manages the procurement of 50,000–60,000 print books and over 160 databases annually. Effective contract management is crucial for ensuring compliance, service continuity, and reader access. In the early stages, the library developed a contract management system to meet its operational needs. The system was subsequently deployed on staff workstations and university servers. This initiative marked a shift from traditional paper-based contract management to a digital approach, not only enhancing the staff's system development capabilities but also laying a robust data foundation for further steps. With the ongoing evolution of our operational models and information technology, the legacy system now requires upgrades to address the following new needs:

- 1) **From Data Archive to Data Integration:** The original system enabled the electronic storage of key documents. The next step is to break down data barriers between procurement, contracts, and acceptance

processes, establishing a comprehensive, lifecycle view of resources to enhance traceability and support management decision-making.

- 2) **From Fixed Processes to Agile Adaptation:** The legacy system ran stably for years on dedicated servers. We now aim to adopt more contemporary deployment solutions, optimizing IT resource allocation and achieving a more cost-effective and efficient operational model.
- 3) **From Standalone Deployment to Consolidated Operations:** The legacy system ran stably for years on dedicated servers. We now aim to adopt more contemporary deployment solutions, optimizing IT resource allocation and achieving a more cost-effective and efficient operational model.
- 4) **From Functionality to User-Centred Design:** The interface of the original system served staff effectively over many years. Building on this foundation, the new system will focus on delivering a modern, intuitive user experience designed to improve both efficiency and job satisfaction.

The university's promotion of the no-code platform provided a timely solution. Its agile, visual, and easy-integrated features aligned perfectly with our needs. We subsequently initiated a staff-led upgrade to develop an efficient and integrated agreement and contract management platform.

## 2. Solutions

The Library Acquisition Agreement and Contract Management System, also referred to as ContractPro, is built around six core forms: Databases, Publishers, Import/Export Agencies, Admin Accounts, Contacts, and Budget. These forms are interconnected, forming a unified data network in which information is entered only once and accessible throughout the system. Upon this basis, the system further leverages the Agreement and Contract forms to construct dedicated entry modules. In addition, three centralised dashboards provide an end-to-end management loop — enabling the tracking of contracts, database details, and budget execution—and deliver a standardised, reusable database for the procurement of electronic resources.

### 1 ) Core Forms Introduction

The system operates through the synergistic use of two core forms—the Agreement Form and the Contract Form — to establish a well-structured and responsibility-defined management system for library resource subscriptions. The Agreement Form serves as a strategic framework, focusing on multi-year collaboration, long-term rights, and budget planning. It is forward-looking and comprehensive in scope. The Contract Form functions as an execution unit,

concentrating on specific operational details, payment activities, and document compliance within a single budget cycle. It emphasizes precision and auditability. Together, they enable end-to-end closed-loop management — from macro-level collaboration frameworks to micro-level implementation—significantly enhancing efficiency and transparency while providing solid risk control and compliance assurance through a complete evidential trail.

#### **a. Agreement Form**

The Agreement Form systematically integrates key elements—from basic information and contract duration to budget planning and legal documents—creating a holistic ecosystem for library subscription. Designed to manage complex collaborations between library (as subscriber) and publishers, it goes beyond the traditional contract archiving. Its core function is to act as a dynamic, centralized information hub that not only ensures clear recording and easy access to every detail throughout the procurement process—from start dates and phased payment plans to specific contract attachments—but also enables effective monitoring and management of agreement fulfillment.

Agreement Form

Seq No.  
00138

Total Agreement Value  
[Redacted]

Databases  
Reays

Publisher  
Elsevier

Agreement Duration  
3 year

Include Read & Publish Agreement  
No

DRAA Agreement File  
2022-Reays-数据库DRAA签署承诺书 (2023-01-01-2026-12-31) -20230113-v11.pdf  
107.23 KB

Agreement File  
Xian-Jiaotong-Liverpool University ECR-876967 Reays 2023-2026 Signed TC (2).pdf  
6.07 KB

RfQ and Negotiation Emails

Agreement No.  
AG2023030100138

Publisher No.  
00000025

Agreement Start Date  
2023-03-01

Agreement End Date  
2026-02-28

Include Permanent Access  
No

Include DRAA Agreement  
Yes

Quotation  
西安交通大学-Reays数据库报价单 (2).pdf  
176.02 KB

**Pricing Proposal**

	Phase	Start Date	End Date	Payment Currency	Amount	Note
1	Phase I	2023-03-01	2024-02-29	USD	[Redacted]	
2	Phase II	2024-03-01	2025-02-28	USD	[Redacted]	
3	Phase III	2025-03-01	2026-02-28	USD	[Redacted]	

**Linked Contract**

Budget Period	Contract No.	Contract Start Date	Contract End Date	Databases	Fee Type	RMB Amount
	CPCDN202303201788	2023-03-01	2026-02-28	Reays	Database Fee	[Redacted]
	CON10124030111	2024-03-01	2025-02-28	Reays	Database Fee	[Redacted]
	CON10123060040	2023-03-01	2024-02-29	Reays	Database Fee	[Redacted]

Figure 1 Agreement Form

## b. Contract Form

The Contract Form is an execution and management tool for individual contracts. It is accurately linked to its parent agreement via a unique contract ID and records key execution terms such as service details, start/end dates, and pricing within a specific budget period. A standout feature is its integration of a complete compliance document chain—

including contract text, acceptance forms, and access test records—ensuring full traceability and documented evidence throughout the contract’s signing, execution, and acceptance phases.

The screenshot displays a 'Contract Form' interface with the following sections and data:

- Contract No.:** CON10121020005
- Total Contract Value (RMB):** [Redacted]
- Link to Agreement:** Yes
- Agreement No.:** AG2022022800149
- Agreement No.:** AG2022022800149
- Databases:** Construction Information Service (CIS)
- Pricing Proposal Table:**

Proposal	Item Name	Start Date	End Date	Payment Currency	Amount
1	Phase I	2022-02-28	2023-02-27	USD	[Redacted]
- Databases:** Construction Information Service (CIS)
- Publisher:** Allium UK Holding Limited
- Publisher No.:** 00000012
- Import and Export Agency:** 北京中科进出口有限责任公司
- Import and Export Agency No.:** 00000008
- Contract Start Date:** 2022-02-28
- Contract End Date:** 2023-02-27
- Include Read & Publish Agreement:** No
- Include Permanent Access:** No
- Include DRAA Agreement:** No
- Select Budget Period:** [Empty]
- Budget Period:** [Empty]
- Budget Type:** [Empty]
- Pricing Table:**

	Databases	Fee Type	Payment Currency	Original Currency Amount	Exchange Rate	Comprehensive Rate	RMB Amount	Note
1	Construction Information Service (CIS)	Database Fee	USD	[Redacted]	6.53	1.30%	[Redacted]	
- Contract File:** Scanner\_CIS\_北京中科\_2022.pdf (2022-02-28)
- Acceptance Form:** 附件有目录截图.png (2022-02-28)
- Usage Data (Calendar Year):** [Empty]
- Access Testing Record:** [Empty]
- Other Attachment:** [Empty]

Figure 2 Contract Form

## 2) Master Data Management

The system establishes an integrated master data management framework for library resources. It allows flexible configuration of field relationships and validation rules, supporting an "enter once, reuse across the system" approach to data governance.

- **Database Form:** Stores core database metadata – such as name, subject category and publisher – and automatically links to relevant contract information, budget period, contacts and admin account, building a complete resource profile. When creating agreements or contracts, key details like publisher and contact information are automatically pulled in through dropdown selection, avoiding repeated entry.
- **Publisher Form:** Holds publisher details and is automatically linked to associated databases and contacts.
- **Import/Export Agency Form:** Stores purchasing channel and agency information, clarifying procurement routes, with automatic links to relevant contacts.
- **Admin Account Form:** Provides a single point of reference for technical details such as access URLs, administrator accounts, IP ranges, concurrent user limits, CARSI/Shibboleth settings and API documentation, simplifying maintenance and access reporting.
- **Contacts Form:** Maintains a role-based directory, organising contacts by function – e.g. Sales, Technical Support, After-sales, or Training Specialists. Each contact is automatically linked to relevant agreements, contracts, databases, publishers and agencies, ensuring the right person can be quickly identified for contract execution,

renewals or issue resolution.

- **Budget Form:** Defines library resource budgets by academic year, department and period. Budget information is treated as core master data and is tightly linked to individual resource procurement contracts

### **3) Data Dashboards**

The system provides three core dashboards that deliver comprehensive coverage of key operational scenario—including agreement and contract management, database pricing tracking, and budget execution monitoring. This significantly enhances transparency, efficiency, and decision-making support across resource management.

#### **a. Agreement & Contract**

- **Centralised Repository:** Holds metadata for agreements and contracts, showing document numbers, titles, validity periods, dates, and key terms.
- **Contract-Agreement Correlation Statistics:** Displays real-time counts of contracts and agreements linked to each database, supporting strategic oversight of resource procurement.
- **Multi-Criteria Dynamic Filters:** Enables combined filtering by database name, date ranges, budget source, and other criteria, allowing users

to quickly locate target documents. This greatly improves efficiency in handling daily queries and audit preparations.

- **Automated Renewal Alerts:** Automatically identifies agreements and contracts expiring in the next quarter and highlights them in a dedicated alert panel. This shifts the process from reactive to proactive, allowing sufficient time for renewal negotiations, budget applications, or resource evaluation—effectively mitigating the risk of service interruption due to overlooked renewals.
- **Access-Level Tagging:** Clearly flags special entitlements such as “Permanent Access Rights”, “APC Waiver”, and “DRAA Member Discounts”, helping to prevent contractual compliance risks.

**Reminder: Expire in Next Quarter**

**Agreement Form** (3 items)

- British Standards Online 2026-01-09
- CRSP Datasets 2026-01-22
- Reaxys 2026-02-28
- Construction Informa... 2026-03-31
- RefWorks 2026-03-31

**Contract Form** (1 item)

**Filter**

Database: contains any

Start Date: is between

Expire Date: is between

ALRD Digital Resou... CDD Digital Resour...

CDD Print Resources

Expire Last Year Expire This Year

Expire Next Year Start This Year

Read & Publish Agr... Permanent Access

DRAA Agreement

Agreement No.	Databases	Agreement Duration	Agreement Start Date	Agreement End Date	Include Read & Publish Agreement	Include Permanent Access	Include DRAA Agreement	Submitter
AG2026010100044	Project MUSE	1 year	2026-01-01	2026-12-31	No	No	Yes	Yuxuan.He
AG2026010100042	JoVE Journal (Biology + Science E...	1 year	2026-01-01	2026-12-31	No	No	Yes	Yuxuan.He
AG2025120100048	Inclites	1 year	2025-12-01	2026-11-30	No	No	Yes	Yuxuan.He
AG2025120100046	Essential Science Indicators (ESI)	1 year	2025-12-01	2026-11-30	No	No	Yes	Yuxuan.He
AG2025082100148	Business Expert Press (BEP) eBooks	Open Ended	2025-08-21	2026-08-20	No	Yes	No	Jiaqi.Liu02
AG2025082100147	World Scientific ebooks	Open Ended	2025-08-21	2026-08-20	No	Yes	No	Jiaqi.Liu02
AG2025082100146	American Society of Civil Enginee...	Open Ended	2025-08-21	2025-08-21	No	Yes	Yes	Jiaqi.Liu02
AG2025082100144	Elsevier E-books	Open Ended	2025-08-21	2026-08-20	No	Yes	No	Jiaqi.Liu02
AG2025081400143	Oxford Scholarship Online	Open Ended	2025-08-14	2026-08-13	No	Yes	No	Jiaqi.Liu02
AG2025081400142	Wiley Online Books	Open Ended	2025-08-14	2026-08-13	No	Yes	No	Jiaqi.Liu02
AG2025080800141	Springer Nature ebooks	Open Ended	2025-08-08	2026-08-07	No	Yes	Yes	Jiaqi.Liu02
AG2025080800140	Springer Nature ebooks	Open Ended	2025-08-08	2026-08-07	No	Yes	Yes	Jiaqi.Liu02
AG2025073100145	IOP ebooks	Open Ended	2025-07-31	2026-07-30	No	Yes	Yes	Jiaqi.Liu02
AG2025051400019	De Gruyter ebooks	1 year	2025-05-14	2026-05-13	No	Yes	No	Jiaqi.Liu02
AG2025042800021	Elgar Online	1 year	2025-04-28	2026-04-27	No	Yes	No	Jiaqi.Liu02
AG2025042800018	Bentham Science ebooks	1 year	2025-04-28	2026-04-27	No	Yes	No	Jiaqi.Liu02
AG2025042500020	Emerald eBook Series Database	1 year	2025-04-25	2026-04-24	No	Yes	Yes	Jiaqi.Liu02
AG2025040100040	RefWorks	1 year	2025-04-01	2026-03-31	No	No	No	Yuxuan.He
AG2025040100038	ABI INFORM Complete, Business ...	1 year	2025-04-01	2026-03-31	No	No	Yes	Yuxuan.He
AG2025033100101	BoardEx	2 year	2025-03-31	2027-03-30	No	No	No	Mingfei.Song

20/page Total: 129 1 / 7

Figure 3 Agreement & Contract Dashboard

## **b. Database Status**

- **Basic Database Information:** Systematically record key details for each database, including publisher, subject category, key contacts, and admin platform, enabling efficient categorization, archiving, and quick retrieval of database status.
- **Classification & Navigation:** Filter databases through tiered options such as publisher, subject category, and contract period, allowing for swift and precise location of target databases.
- **Multi-Year Price Trend Analysis:** Automatically aggregate contract pricing data across multiple financial years. Using timeline-based tables and line charts, users gain clear visibility into databases with stable pricing, significant increases, or cyclical fluctuations. This provides critical factual and data-driven support for subsequent procurement negotiations.

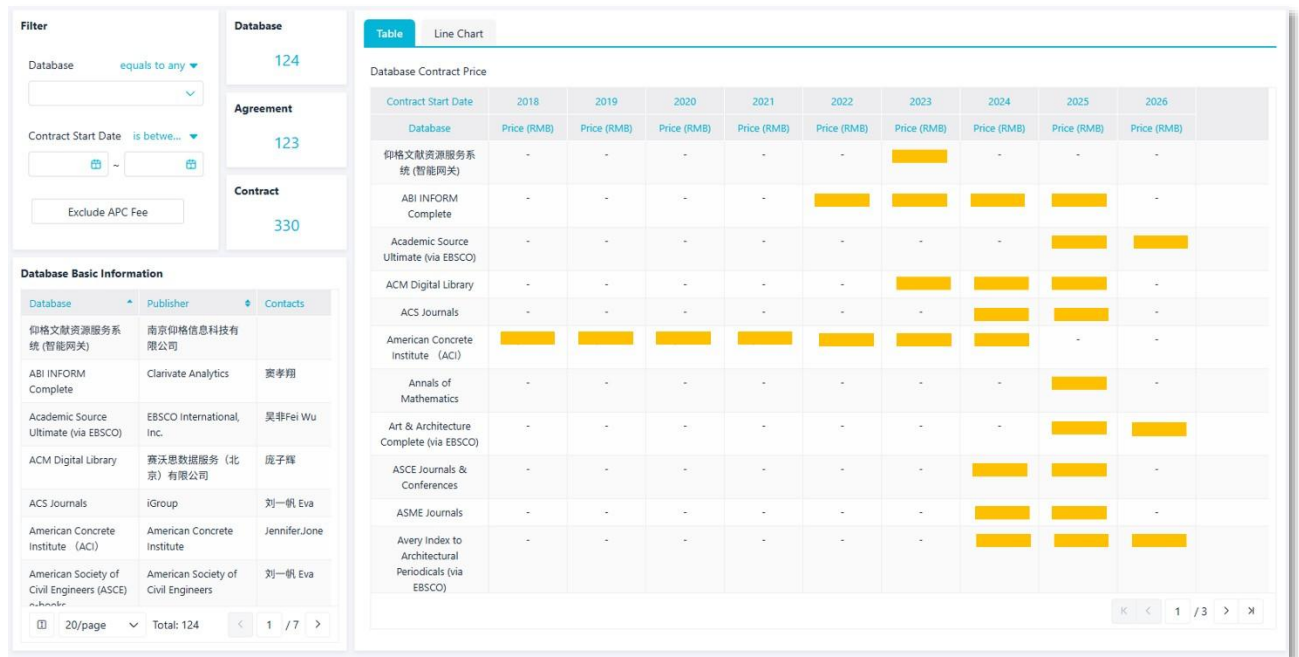


Figure 4 Database Tracking Dashboard

### c. Budget Status

- Holistic Information Integration:** Displays budget data alongside key operational metrics such as the total number of databases, agreements, and contracts, creating a unified management view of "resources – contracts – funds". This integrates financial and operational data, improving overall management coherence and collaboration.
- Multi-Year Budget Overview:** Presents a synchronized view of total budget, expenditure, remaining balance, and execution rate across multiple academic years. Supports high-level budget planning and historical comparison, providing users with a clear long-term

perspective on the library's budget status.

- Expenditure Structure & Proportion Analysis: Uses bar charts and pie charts to display budget spending for each database, clearly highlighting major fund allocation areas. Automatically identifies high-cost resources and allows users to drill down into

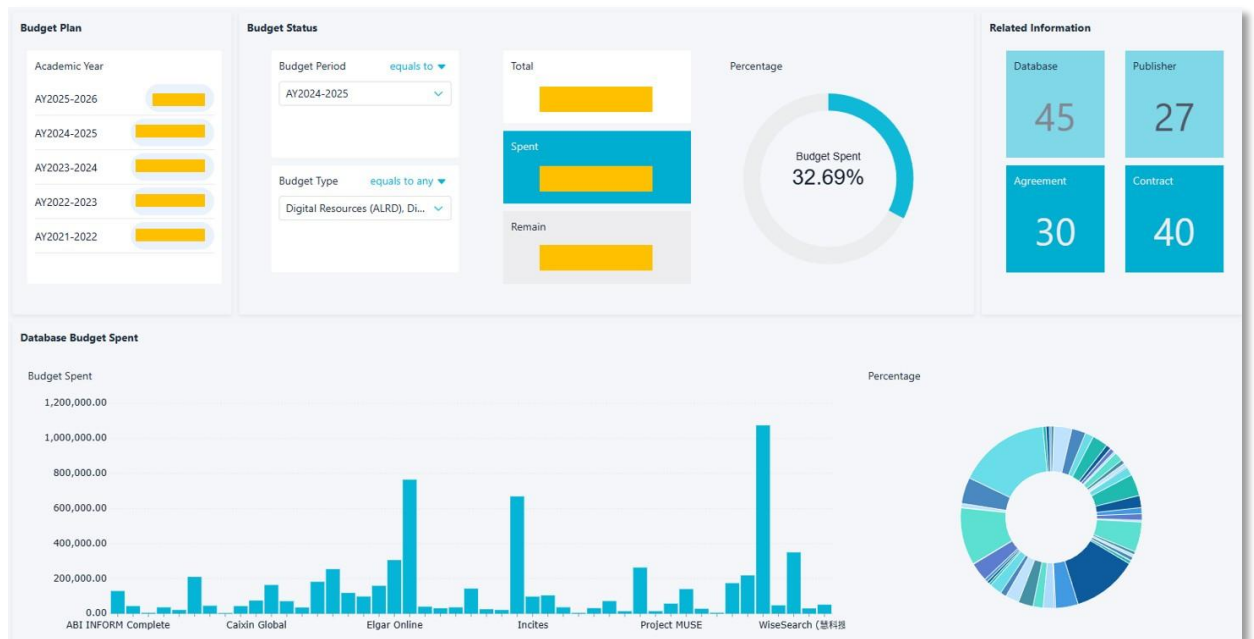


Figure 5 Budget Execution Monitoring Dashboard

### 3. Outcomes and Benefits

#### 1) Operational efficiency greatly enhanced

Contract searches now take seconds instead of minutes, and fully automated renewal reminders free staff from repetitive tasks—giving them more time for resource evaluation and strategy development.

#### 2) Operating costs significantly reduced

Moving to a no-code platform cut server and maintenance expenses.

The result is lightweight, cost-effective system management.

### **3) Risk management strengthened across the board**

An automated alert system now monitors renewal deadlines for all 160+ databases, reducing human error and preventing service interruptions.

This ensures continuous access to digital resources and more controlled budget oversight.

### **4) Team skills steadily upgraded**

The project developed a library team skilled in no-code development and business analysis, boosting digital autonomy and innovation — and building key talent for the future smart library.

## **4. Next Steps**

### **1) Incorporating Usage Data**

Usage statistics, such as database access requests and downloads, will be integrated into the system to build a cost-benefit analysis model based on usage. By comparing procurement costs with actual

### **2) Flagging Abnormal Price Changes**

An alert mechanism will be implemented to identify unusual price

fluctuations, and automatically flag databases with year-on-year price increases exceeding 10% or sudden drops. These anomalies will be highlighted in charts to visualize price trends and help mitigate operational risks.