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ContractIQ - Use Case Scenarios

Overview

ContractIQ supports clinical trial contract management through AI-powered analysis. These use cases map directly to the technical implementation and demonstrate real-world value.

CATEGORY 1: DOCUMENT MANAGEMENT & PROCESSING

UC-001: Upload and Process Contract Stack

Actor: Clinical Operations Manager **Goal:** Digitize and structure a complete contract stack for analysis

Scenario:

1. User creates a new contract stack: "HEARTBEAT-3 - Memorial Medical"
2. Uploads 6 documents: Original CTA + 5 amendments (PDFs)
3. System processes documents in background (30 seconds)
4. System extracts sections, identifies amendments, builds knowledge graph
5. User receives notification: "Contract stack ready for analysis"

Success Criteria:

- All documents parsed successfully
- Sections identified with 95%+ accuracy
- Knowledge graph contains all clause relationships
- Processing time <30 seconds per stack

Value: Transforms 6 separate PDFs into a queryable, analyzable knowledge base

UC-002: View Contract Timeline

Actor: Site Contract Manager **Goal:** Understand the evolution of a contract over time

Scenario:

1. User opens contract stack

2. Selects "Timeline View"
3. System displays interactive timeline showing:
 - Original CTA (Jan 2022)
 - Amendment 1 (Jun 2022) - Added MRI, extended follow-up
 - Amendment 2 (Feb 2023) - PI change
 - Amendment 3 (Aug 2023) - COVID provisions + payment change
 - Amendment 4 (Mar 2024) - Protocol changes
 - Amendment 5 (Nov 2024) - Timeline extension
4. User clicks on Amendment 3 to see details
5. System shows: sections modified, rationale, current vs. previous terms

Success Criteria:

- Chronological accuracy 100%
- All amendments properly sequenced
- Visual clarity on what changed when

Value: Instant visibility into contract evolution vs. manual document review

CATEGORY 2: TRUTH RECONSTITUTION

UC-003: Query Current Contract Terms

Actor: Financial Analyst **Goal:** Determine current payment terms without reading all amendments

Scenario:

1. User asks: "What are the current payment terms for this site?"
2. System analyzes in real-time (10 seconds):
 - Searches all payment-related clauses
 - Applies amendment override logic
 - Identifies that Amendment 3 changed terms from Net 30 to Net 45
 - Verifies no later amendments modified payment terms
3. System responds: "Net 45 days per Amendment 3, Section 7.2, effective August 17, 2023"

4. System shows source: Direct link to Amendment 3, Section 7.2 with highlighted text
5. User clicks source to view original document context

Success Criteria:

- Answer provided in <15 seconds
- 100% accuracy on current terms
- Complete source citation with document + section + date
- Confidence score displayed

Value: 10 seconds vs. 2-3 days manual review

UC-004: Compare Clause Evolution

Actor: Legal Counsel **Goal:** Understand how a specific clause changed over time

Scenario:

1. User queries: "Show me the history of Section 7.2 (Payment Terms)"
2. System displays clause evolution:
 - **Original CTA (Jan 2022):** "Net 30 days"
 - **Amendment 1 (Jun 2022):** No change
 - **Amendment 2 (Feb 2023):** No change
 - **Amendment 3 (Aug 2023):** Changed to "Net 45 days" ! Buried in COVID amendment
 - **Amendment 4 (Mar 2024):** No change
 - **Amendment 5 (Nov 2024):** No change
 - **Current State:** "Net 45 days"
3. User sees warning: "This change was buried in Amendment 3 (COVID provisions)"
4. User exports clause history to Word document for legal review

Success Criteria:

- Complete modification history
- Highlight buried changes
- Exportable format for legal review

Value: Instant clause archaeology vs. manual cross-referencing

UC-005: Answer Multi-Clause Questions

Actor: Study Manager **Goal:** Get comprehensive answers requiring multiple contract sections

Scenario:

1. User asks: "What are the complete payment terms including holdback and closeout?"
2. System identifies this requires multiple sections:
 - Section 7.2: Payment timing (Net 45)
 - Section 7.4: Holdback (10%)
 - Exhibit B-2: Per-patient amounts (\$19,800)
 - Exhibit B-2: Closeout payment (\$6,000)
3. System synthesizes comprehensive answer:

Current Payment Structure:

- Timing: Net 45 days (Amendment 3, Section 7.2)
- Per-Patient: \$19,800 (Exhibit B-2, Amendment 4)
- Holdback: 10% retained until LPLV + closeout (Section 7.4)
- Closeout: \$6,000 upon completion (Exhibit B-2)
- Total Budget: \$442,900 for 20 patients

4. Each component includes clickable source links

Success Criteria:

- Captures all relevant clauses
- Synthesizes coherent answer
- Complete source attribution

Value: Comprehensive answer from scattered sources in one query

CATEGORY 3: CONFLICT & RISK DETECTION

UC-006: Detect Hidden Conflicts

Actor: Compliance Officer **Goal:** Proactively identify contract inconsistencies before they cause problems

Scenario:

1. User clicks "Analyze Conflicts" for contract stack
2. System runs comprehensive conflict detection (15 seconds)
3. System identifies 6 conflicts:

CRITICAL: Insurance Coverage Gap

- Original agreement: Coverage through Dec 31, 2024
- Amendment 5: Study extended to June 30, 2025
- Risk: 6-month gap with no insurance coverage
- Impact: Regulatory violation, site liability exposure
- Recommendation: Extend insurance policy immediately

HIGH: Buried Payment Term Change

- Amendment 3: Payment terms changed from Net 30 to Net 45
- Location: Hidden in COVID-related amendment (Section 7.2)
- Risk: Finance team may not know, causing payment delays
- Recommendation: Update accounting system to Net 45

MEDIUM: Cross-Reference Ambiguity

- Amendment 4: "Protocol as amended" (doesn't specify version)
- Risk: Unclear whether refers to Protocol 2.0 or 3.0
- Recommendation: Clarify in next amendment

4. User exports conflict report to PDF for legal review
5. User marks conflicts as "acknowledged" or "resolved"

Success Criteria:

- Detect 90%+ of material conflicts (validated vs. human review)
- <5% false positives
- Processing time <20 seconds
- Clear prioritization (critical → high → medium → low)

Value: Proactive risk detection vs. reactive crisis management

UC-007: Monitor Contract Health

Actor: Contract Administrator **Goal:** Continuously monitor portfolio for emerging issues

Scenario:

1. User views "Contract Health Dashboard"
2. System displays real-time monitoring across portfolio:

Active Alerts (3):

- Site 301: Insurance expires Dec 31, 2024 but study runs to June 2025 (90 days)
- Site 402: Payment cycle degraded from Net 45 to Net 68 (trending)
- Site 505: IRB approval expires in 30 days, study still active

Upcoming Events (5):

- 3 contracts expire Q1 2025
- 2 sites approaching enrollment targets (closeout pending)

Regulatory Changes (1):

- FDA updated ICF guidance → 47 contracts require review

3. User clicks on Site 301 alert
4. System shows detailed analysis and recommended actions
5. User assigns task to legal team to extend insurance

Success Criteria:

- 100% detection of expiration date conflicts
- 90-day advance warning for critical events
- Zero missed regulatory updates

Value: Prevents emergencies through proactive monitoring

CATEGORY 4: RIPPLE EFFECT ANALYSIS

UC-008: Analyze Amendment Impact Before Execution

Actor: Clinical Operations Director **Goal:** Understand full implications of proposed amendment before issuing to sites

Scenario:

1. User proposes amendment: "Extend data retention from 15 years to 25 years"
2. User clicks "Analyze Ripple Effects"
3. System performs multi-hop analysis (20 seconds):

Direct Impacts (Hop 1):

- Section 9.4: Archive storage costs increase by \$3-5K
- Section 9.5: Data destruction timeline extends +10 years

Indirect Impacts (Hop 2):

- Section 12.1: Indemnification covers 7 years but data retention is 25 years → GAP
- Section 13.4: Insurance coverage ends year 5 but data retention is 25 years → GAP
- Section 11.2: Vendor contracts specify 7-year retention → CONFLICT

Cascade Impacts (Hop 3):

- Section 9.3: Technology obsolescence risk (EDC may sunset in 10-12 years)
- Section 10.1: Audit rights limited to 7 years, inconsistent with 25-year retention

4. System quantifies total impact:

- Timeline: +8-12 weeks for vendor renegotiation
- Cost: **1.8M–2.3M** (immediate + future)
- Risk: 3 regulatory violations if not addressed

5. System recommends:

- **CRITICAL:** Extend indemnification to 25 years
- **CRITICAL:** Extend insurance to 25 years
- **HIGH:** Renegotiate vendor contracts (\$900K)
- **MEDIUM:** Add technology migration plan

Success Criteria:

- Detect 95%+ of material impacts
- Multi-hop reasoning up to 5 levels
- Quantified cost/timeline estimates
- Actionable prioritized recommendations

Value: \$50K-150K rework prevention by finding issues before execution

UC-009: Compare Amendment Scenarios

Actor: Budget Manager **Goal:** Evaluate multiple amendment options before deciding which to pursue

Scenario:

1. User creates three amendment scenarios:

- **Scenario A:** Extend data retention to 25 years
- **Scenario B:** Add cardiac MRI at Week 24
- **Scenario C:** Remove Week 56/64 follow-up visits

2. User clicks "Compare Scenarios"

3. System analyzes each scenario and displays comparison:

Metric	Scenario A	Scenario B	Scenario C
Cost Impact	+\$1.8-2.3M	+\$800/patient	-\$1,400/patient
Timeline	+8-12 weeks	+3 weeks	-2 weeks
Sections Impacted	11	4	6
Risk Level	High	Medium	Low

Metric	Scenario A	Scenario B	Scenario C
Site Acceptance	62%	82%	95%

4. User selects Scenario C (cost reduction, high acceptance)
5. System generates draft amendment with ripple effects already analyzed

Success Criteria:

- Side-by-side comparison of up to 5 scenarios
- Consistent metrics across scenarios
- Clear recommendation based on objectives

Value: Data-driven amendment decisions vs. gut feel

CATEGORY 5: CONTRACT REUSABILITY

UC-010: Assess Contract Reusability for New Study

Actor: Site Selection Manager **Goal:** Determine if existing site contract can be reused for new study

Scenario:

1. User selects existing contract: "HEARTBEAT-3 - Memorial Medical (Cardiology)"
2. User specifies new study: "ONC-402 - Phase II Oncology"
3. User clicks "Assess Reusability"
4. System performs deep comparison (15 seconds):

✗ BLOCKERS (Cannot Reuse):

- **PI Qualifications:** Current PI is cardiologist, requires oncologist
- **Indemnification Scope:** Covers cardiovascular, not immunotherapy

- **Budget Structure:** No line items for biopsies, CT/PET scans, immunophenotyping

⚠ MAJOR MODIFICATIONS REQUIRED:

- **Insurance:** Current $1M/3M$, oncology requires $5M/10M$
- **Data Retention:** 15 years may be insufficient (oncology often requires 25 years)

✓ REUSABLE CLAUSES:

- Payment Terms: Net 45 (reusable)
- Confidentiality: Therapy-agnostic (reusable)
- Publication Rights: Standard language (reusable)

5. System provides strategic recommendation:

RECOMMENDATION: Start Fresh Contract

Rationale:

- 3 critical blockers require complete renegotiation
- Modification approach: 8–10 weeks, 73% success rate
- Fresh contract approach: 12–14 weeks, 95% success rate
- Time savings of modification not worth increased risk

Suggested Approach:

- Use master oncology template as starting point
- Reuse only administrative clauses (Articles 8, 10, 18–21)
- Leverage existing site relationship for faster negotiation

Success Criteria:

- Identifies all critical blockers
- Provides accurate effort estimates
- Strategic recommendation with rationale

Value: Prevents 8–10 weeks wasted on incompatible contract modification

UC-011: Find Best Template for New Site

Actor: Contracts Lead **Goal:** Identify the optimal contract template from portfolio for new site negotiation

Scenario:

1. User starting negotiation with new site: "University Hospital - Oncology Trial"
2. User clicks "Find Similar Contracts"
3. User specifies criteria:
 - Therapeutic area: Oncology
 - Site type: Academic medical center
 - Geography: US
4. System searches portfolio and recommends:

Best Match: Site 405 - Phase II Oncology

- Therapeutic area: Oncology (exact match)
- Site type: Academic medical center
- Negotiation cycle: 4.2 weeks (fastest in portfolio)
- Acceptance rate: 94% (highest for oncology)
- Key features:
 - Indemnification language accepted by 23/25 academic sites
 - Per-patient payment structure proven optimal for oncology
 - Insurance terms compliant with latest requirements

Alternative: Site 612 - Phase III Oncology

- 6.1 week cycle, 88% acceptance
- More comprehensive but slower negotiation

5. System generates new contract using Site 405 as template
6. User reviews, makes site-specific adjustments, sends to site

Success Criteria:

- Relevant recommendations 90%+ of time
- Success metrics based on historical data
- One-click template generation

Value: Start negotiations with proven language vs. generic templates

CATEGORY 6: PORTFOLIO INTELLIGENCE

UC-012: Portfolio-Wide Payment Terms Analysis

Actor: Finance Director **Goal:** Standardize payment terms across entire site portfolio

Scenario:

1. User opens "Portfolio Analytics"
2. User runs query: "Show payment terms distribution across all contracts"
3. System analyzes 150 active contracts:

Payment Terms Distribution:

- Net 30: 42 sites (28%)
- Net 45: 78 sites (52%)
- Net 60: 24 sites (16%)
- Net 90: 6 sites (4%)

Analysis:

- Average payment term: Net 47 days
- Industry benchmark: Net 45 days Aligned
- Outliers: 6 sites at Net 90 (investigate)
- Trend: Shifting from Net 30 to Net 45 over past 2 years

4. User drills into Net 90 sites
5. System shows these are all European sites (regulatory requirement)
6. User exports report for CFO showing portfolio is optimized

Success Criteria:

- Process 1000+ contracts in <30 seconds
- Accurate categorization

- Trend analysis over time

Value: Portfolio-level insights impossible to gather manually

UC-013: Benchmark Against Industry

Actor: VP Clinical Operations **Goal:** Understand how our contracts compare to market

Scenario:

1. User views "Industry Benchmarking Dashboard"
2. System displays (anonymized cross-customer data):

Your Portfolio vs. Industry:

- **Per-Patient Payments (Phase III Cardiology)**

- Your average: \$19,200
- Industry median: \$21,500
- Industry 75th percentile: \$24,000
- ⚠ Alert: You may be underpaying by 11%

- **Negotiation Cycle Time**

- Your average: 4.8 weeks
- Industry median: 6.8 weeks
- ✅ You're 30% faster than average

- **Payment Terms**

- Your mode: Net 45
- Industry mode: Net 45
- ✅ Aligned with market

- **Indemnification Language**

- Your acceptance rate: 73%
- Top performers: 91%
- 💡 Recommendation: Review Site 405 language

3. User clicks on payment recommendation
4. System shows: "Consider increasing cardiology per-patient to \$21,000 to improve enrollment competitiveness"
5. User shares with budget team for next protocol

Success Criteria:

- Benchmarks based on 10,000+ contracts minimum
- Complete anonymization (no customer identification)
- Actionable recommendations

Value: Strategic intelligence for competitive positioning

UC-014: Track Clause Performance Over Time

Actor: Legal Operations Manager **Goal:** Identify which contract clauses lead to fastest execution

Scenario:

1. User asks: "Which indemnification language gets accepted fastest?"
2. System analyzes 200 contracts with different indemnification variants:

Indemnification Performance:

- **Variant A** (Sponsor broad indemnification):
 - Used in: 80 contracts
 - Acceptance rate: 62%
 - Average negotiation: 8.2 weeks
 - Common pushback: Scope too broad
- **Variant B** (Balanced with carve-outs):
 - Used in: 95 contracts
 - Acceptance rate: 91%
 - Average negotiation: 4.1 weeks  **FASTEST**
 - Rare pushback: Well-balanced

- **Variant C** (Site-favorable):

- Used in: 25 contracts
- Acceptance rate: 96%
- Average negotiation: 5.3 weeks
- Note: Higher cost due to broader coverage

3. System recommends: "Adopt Variant B as standard - optimal balance of acceptance rate and timeline"

4. User updates master template with Variant B language

5. System tracks improvement over next 6 months

Success Criteria:

- Statistical significance (minimum 30 samples per variant)
- Control for confounding factors (site type, geography)
- Measurable improvement after template updates

Value: Evidence-based contract optimization vs. subjective preferences

CATEGORY 7: COLLABORATION & WORKFLOW

UC-015: Share Analysis with Team

Actor: Contract Manager **Goal:** Collaborate with legal and finance teams on contract review

Scenario:

1. User completes ripple effect analysis on proposed amendment
2. User clicks "Share Analysis"
3. User selects recipients: Legal team, Finance team, Study Manager
4. System generates shareable report with:
 - Executive summary
 - Detailed impacts by category

- Recommendations with priority
 - Source documents attached
5. Recipients receive email with link to interactive report
 6. Legal counsel adds comments: "Insurance gap is critical - must address"
 7. Finance approves budget impact: "Approved for \$2.1M"
 8. Study Manager acknowledges timeline: "8-week delay acceptable"
 9. All feedback consolidated in system
 10. User proceeds with amendment knowing all stakeholders aligned

Success Criteria:

- Shareable links with access control
- Email notifications
- Comments tracked and attributed

Value: Async collaboration vs. email chains and meetings

UC-016: Export for Regulatory Audit

Actor: Quality Assurance Manager **Goal:** Prepare contract documentation for FDA audit

Scenario:

1. FDA announces inspection, requests contract documentation
2. User opens contract stack for site under audit
3. User clicks "Generate Audit Package"
4. System creates comprehensive package:
 - All source documents (PDFs)
 - Complete clause history with provenance
 - Amendment tracking documentation
 - Conflict resolution records
 - Query history showing due diligence
5. System generates audit report showing:
 - When each document was executed
 - What changed in each amendment
 - How conflicts were identified and resolved
 - Compliance verification for all terms
6. User exports as ZIP file with organized folders

7. Package submitted to FDA within 2 hours of request

Success Criteria:

- Complete documentation in <5 minutes
- FDA-compliant formatting
- Full provenance chain
- No manual document gathering required

Value: 2 hours vs. 2-3 days manual preparation

CATEGORY 8: PREDICTIVE INTELLIGENCE (Future Enhancements)

UC-017: Predict Negotiation Outcome

Actor: Site Engagement Manager **Goal:** Understand likelihood of site accepting proposed terms

Scenario:

1. User proposes amendment to Site 301: "Add cardiac MRI, increase per-patient by \$1,200"
2. User clicks "Predict Outcome"
3. System analyzes historical data:
 - Site 301 history: 5 prior amendments
 - Similar amendments at academic sites: 127 cases
 - Imaging capability at Site 301: High (MRI center on campus)
4. System predicts:

Acceptance Probability: 82%

Confidence: High (based on 127 similar cases)

Predicted Timeline: 2.8 weeks

Expected Counter-Proposal: \$1,500 per patient (64% probability)

Recommendation:

– Propose \$1,200 as starting point

- Be prepared to accept up to \$1,400
- Highlight site's imaging center capacity in proposal
- Reference similar pricing at comparable sites

If proposal is rejected:

- Most likely objection: Budget constraints (73%)
- Alternative: Partner imaging with nearby facility (-\$400/patient)

Success Criteria:

- Prediction accuracy within $\pm 15\%$ of actual outcome
- Continuous learning from new negotiations
- Transparent confidence scoring

Value: Strategic negotiation advantage vs. blind proposals

UC-018: Recommend Optimal Amendment Timing

Actor: Portfolio Manager **Goal:** Decide when to issue amendments across multiple sites

Scenario:

1. User needs to issue protocol amendment to 50 sites
2. User clicks "Optimize Execution Plan"
3. System analyzes:
 - Current workload at each site
 - Historical response times
 - Upcoming site events (IRB meetings, enrollment milestones)
 - Dependencies between sites
4. System recommends phased approach:

Phase 1 (Weeks 1–2): Fast sites (12 sites)
 - Sites 301, 405, 512... (avg 3.2 week response)
 - Start immediately while protocol is finalized

Phase 2 (Weeks 3–4): Medium sites (23 sites)
 - Sites 203, 308, 421... (avg 5.1 week response)
 - Start after Phase 1 feedback incorporated

Phase 3 (Weeks 5–6): Slow sites (15 sites)
 - Sites 107, 234, 567... (avg 8.3 week response)

- Start last, allow maximum time

Predicted Completion: 8.7 weeks (vs. 12.1 weeks if simultaneous)

Success Criteria:

- 20-30% faster portfolio-wide execution
- Resource leveling across teams
- Risk mitigation through phasing

Value: Strategic portfolio management vs. ad-hoc execution

SUMMARY TABLE: ALL USE CASES

ID	Use Case	Actor	Time Saved	Key Value
UC-001	Upload & Process	Ops Manager	2 hrs	Automated digitization
UC-002	View Timeline	Contract Manager	30 min	Visual evolution
UC-003	Query Terms	Financial Analyst	3 days	Instant truth
UC-004	Clause Evolution	Legal Counsel	4 hrs	Archaeology automation
UC-005	Multi-Clause Query	Study Manager	2 hrs	Comprehensive synthesis
UC-006	Detect Conflicts	Compliance Officer	2 days	Proactive risk detection
UC-007	Monitor Health	Contract Admin	Daily	Prevents emergencies
UC-008	Ripple Analysis	Ops Director	2 weeks	\$50K-150K rework prevention

ID	Use Case	Actor	Time Saved	Key Value
UC-009	Compare Scenarios	Budget Manager	1 week	Data-driven decisions
UC-010	Assess Reusability	Site Selection	1 day	Prevents 8-week mistake
UC-011	Find Template	Contracts Lead	3 days	Proven language
UC-012	Portfolio Analytics	Finance Director	1 week	Strategic insights
UC-013	Industry Benchmark	VP Ops	N/A	Competitive intelligence
UC-014	Clause Performance	Legal Ops	N/A	Evidence-based optimization
UC-015	Share Analysis	Contract Manager	2 days	Async collaboration
UC-016	Audit Export	QA Manager	3 days	Compliance automation
UC-017	Predict Outcome	Site Engagement	N/A	Negotiation advantage
UC-018	Optimize Timing	Portfolio Manager	30%	Resource optimization

PRIORITIZATION FOR MVP

Phase 1 (Weeks 1-8) - Core Demo:

- UC-001: Upload & Process
- UC-003: Query Terms
- UC-006: Detect Conflicts
- UC-008: Ripple Analysis

Phase 2 (Weeks 9-16) - Pilot:

- UC-002: Timeline View
- UC-004: Clause Evolution
- UC-007: Monitor Health
- UC-010: Assess Reusability
- UC-015: Share Analysis

Phase 3 (Months 5-8) - Production:

- UC-012: Portfolio Analytics
- UC-016: Audit Export
- UC-009: Compare Scenarios
- UC-011: Find Template

Phase 4 (Year 2) - Advanced:

- UC-013: Industry Benchmark
 - UC-014: Clause Performance
 - UC-017: Predict Outcome
 - UC-018: Optimize Timing
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This use case document provides clear scenarios that demonstrate tangible user value at every level.