The 4-Phase Model of Industry Consolidation

How fragmented markets evolve into oligopolies and what operators must do to survive each stage

WHITE PAPER SERIES • PART 2A

About This Series

This paper is part 2a of a four-part series examining why consolidation occurs and how it reshapes industries over time. This paper focuses on the consolidation of the CRO (contract research organization) industry.

- **Part 1** introduces the four-phase consolidation model and explains each phase in detail. This framework serves as the foundation for the entire series.
- **Part 2** (this whitepaper) applies the four-phase model to the IRB (Institutional Review Board) industry and the CRO (contract research organization) industry through two separate white papers. Both industries have progressed through all four phases, making them useful case studies for understanding how consolidation unfolds in clinical research.
- **Part 3** applies the same model to the clinical research site sector. It outlines where the site industry stands today and projects how it is likely to evolve based on the patterns observed in Parts 1 and 2.
- **Part 4** focuses on implications for individual clinical research sites. It examines the strategic options available to site owners and executives given this industry trajectory, including the risks of inaction and the trade-offs of different paths forward.

Executive Summary

Over the last three decades, the Contract Research Organization (CRO) industry has undergone a steady and irreversible consolidation. What began as a fragmented collection of regional service providers has transformed into a global oligopoly dominated by a small number of full-service firms.

This evolution was driven by sponsor demand for global execution, consistent data, and end-to-end services, as well as by the increasing complexity of clinical development and regulatory requirements. Today, a handful of large CROs manage the majority of global clinical development activity, while smaller firms survive primarily in narrow, specialized niches.

This white paper applies a four-phase consolidation model to the CRO industry, explaining how consolidation unfolded, why it accelerated, and what the current market structure means for sponsors, CROs, and the broader clinical research ecosystem.

The 4-Phase Model of Industry Consolidation

Industries that deliver complex, regulated services tend to consolidate as scale, systems, and capital become prerequisites for competing effectively. The CRO industry follows this pattern closely.

The four phases are fragmentation, scale, mega-consolidation, and maturity. Each phase reflects changes in buyer behavior, operational requirements, and competitive advantage.

The 4-Phase Model of Consolidation: CROs

Understanding Market Evolution from Fragmentation to Maturity

01 PHASE 1 — Fragmentation

- 50+ regional and specialty CROs operate independently, most with <500 employees
- Sponsors routinely split programs across multiple CROs for function
- CROs focus on monitoring, data management, biostatistics, or regulatory work
- Limited global reach and no integrated platforms
- CROs act as tactical vendors, not strategic partners

02 PHASE 2 — Scale

- Mid-sized CROs acquire smaller peers to offer full-service models
- Preferred-provider agreements emerge with large pharma sponsors
- Quintiles, Covance, Parexel, and PRA expand aggressively
- Geographic expansion becomes critical for winning multi-country trials
- By ~2010, ~10 CROs control roughly 50% of global market revenue

03 PHASE 3 — Focus

- Quintiles merges with IMS Health to form IQVIA
- LabCorp acquires Covance
- ICON acquires PRA Health Sciences
- Thermo Fisher acquires PPD
- Top 10 CROs control ~57–60% of global clinical development spend

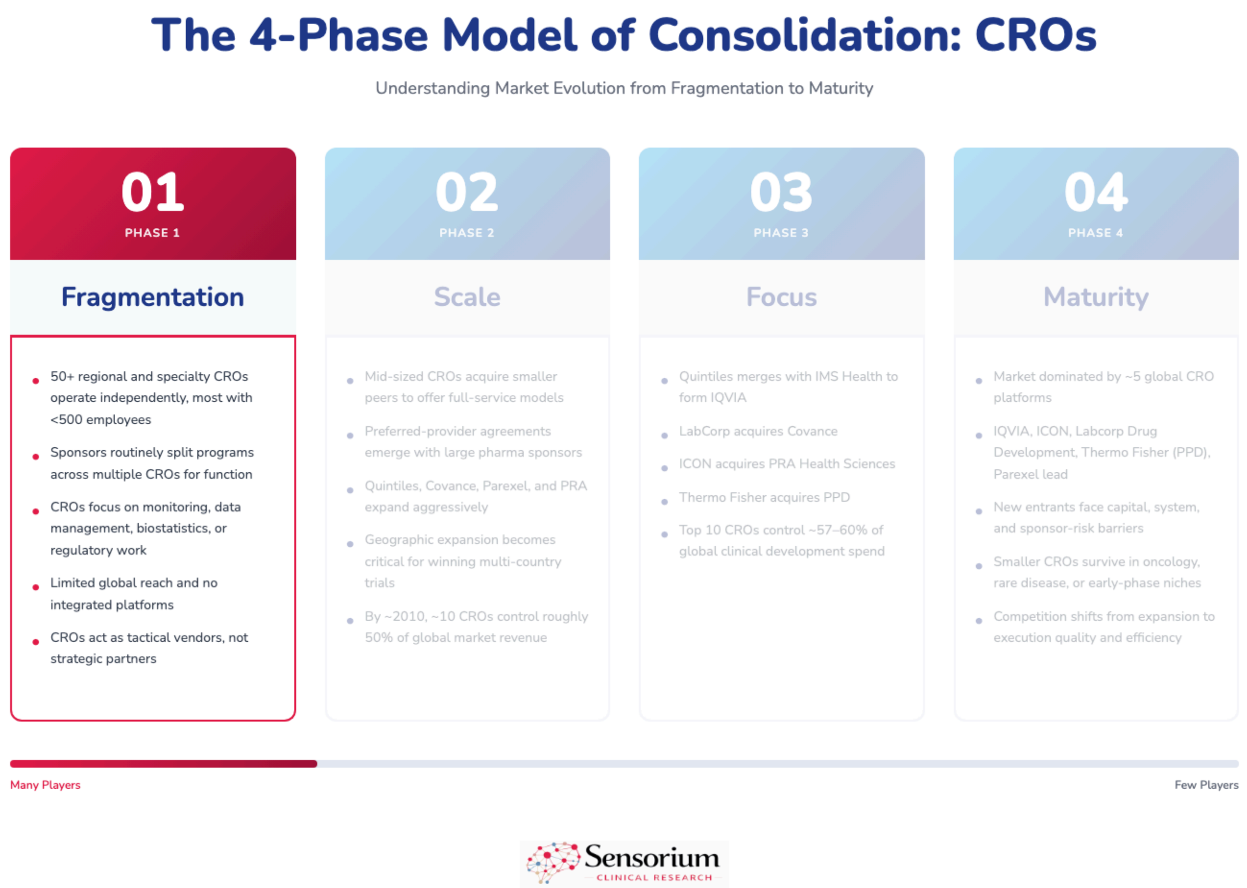
04 PHASE 4 — Maturity

- Market dominated by ~5 global CRO platforms
- IQVIA, ICON, Labcorp Drug Development, Thermo Fisher (PPD), Parexel lead
- New entrants face capital, system, and sponsor-risk barriers
- Smaller CROs survive in oncology, rare disease, or early-phase niches
- Competition shifts from expansion to execution quality and efficiency

Many Players — Few Players

Phase 1: Fragmentation

Pre-1995



Prior to the mid-1990s, the CRO industry was highly fragmented. Dozens of small CROs operated regionally or focused on narrow functional specialties such as clinical monitoring, data management, biostatistics, or regulatory support. Most employed fewer than 500 people and had limited geographic reach.

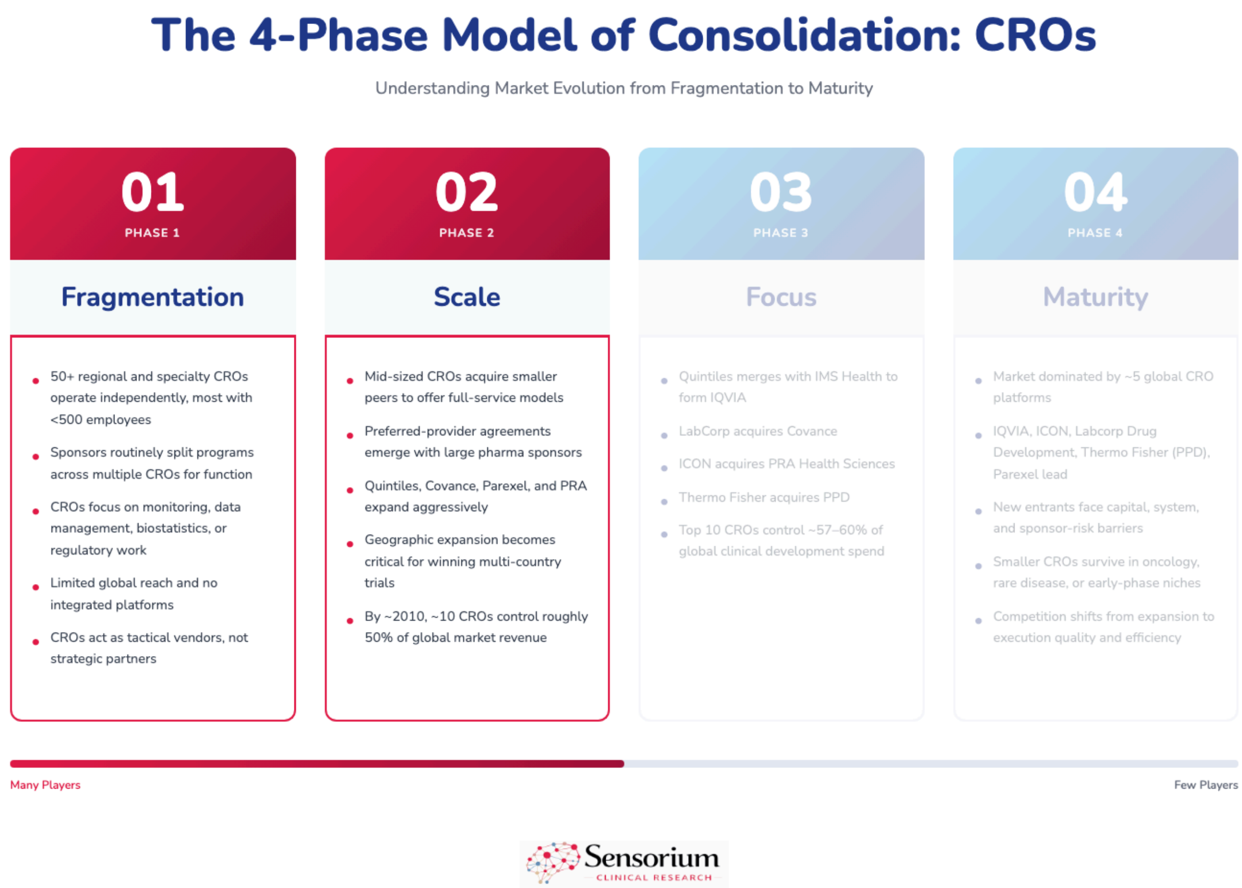
Phase 1: Fragmentation (Continued)

Sponsors commonly worked with multiple CROs in parallel, assigning different components of a single development program to different vendors. While this approach allowed flexibility, it created significant redundancy and inconsistency. Data systems were fragmented, oversight was complex, and accountability was diffuse.

At this stage, CROs functioned primarily as tactical service providers rather than strategic partners. Scale offered limited advantage, and differentiation was often based on relationships or niche expertise.

Phase 2: Scale

1995 to 2010



The shift toward consolidation began as sponsors sought greater efficiency and integration. Mid-sized CROs started acquiring smaller firms to expand their service offerings and geographic footprint. The goal was to provide full-service capabilities that could support entire clinical programs rather than isolated functions.

During this period, sponsors introduced preferred-provider agreements, awarding large, multi-year contracts to a small number of CROs. These agreements favored firms that could demonstrate global reach, consistent execution, and the ability to manage complex, multi-country trials.

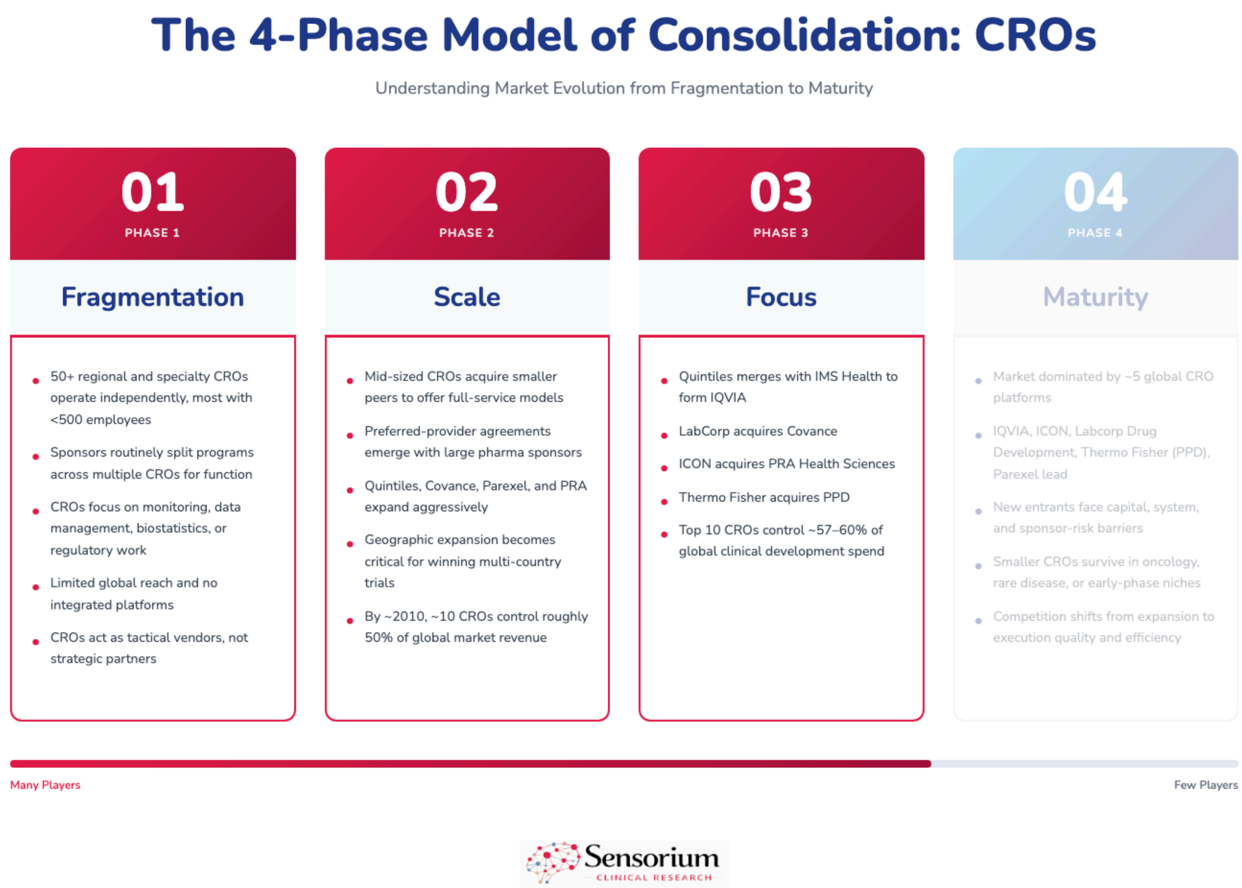
Phase 2: Scale (Continued)

Companies such as Quintiles, Covance, ICON, and Parexel grew rapidly through a combination of acquisitions and organic expansion. By 2010, approximately ten CROs accounted for roughly half of total market revenue, signaling a clear shift toward concentration.

Scale became a competitive advantage. Larger CROs could invest in systems, standardize processes, and absorb regulatory complexity more effectively than smaller peers.

Phase 3: Mega-Consolidation

2010 to 2022



Phase 3 was defined by transformative mergers and acquisitions that reshaped the global CRO landscape. Several landmark transactions created a new class of CRO giants. Quintiles merged with IMS Health to form IQVIA in 2016, combining clinical execution with real-world data and analytics. LabCorp acquired Covance in 2015, integrating laboratory services with clinical development. ICON acquired PRA Health Sciences in 2021, and Thermo Fisher acquired PPD in the same year.

These transactions significantly increased concentration. By the end of this phase, the top ten CROs controlled approximately 57 to 60 percent of the global market.

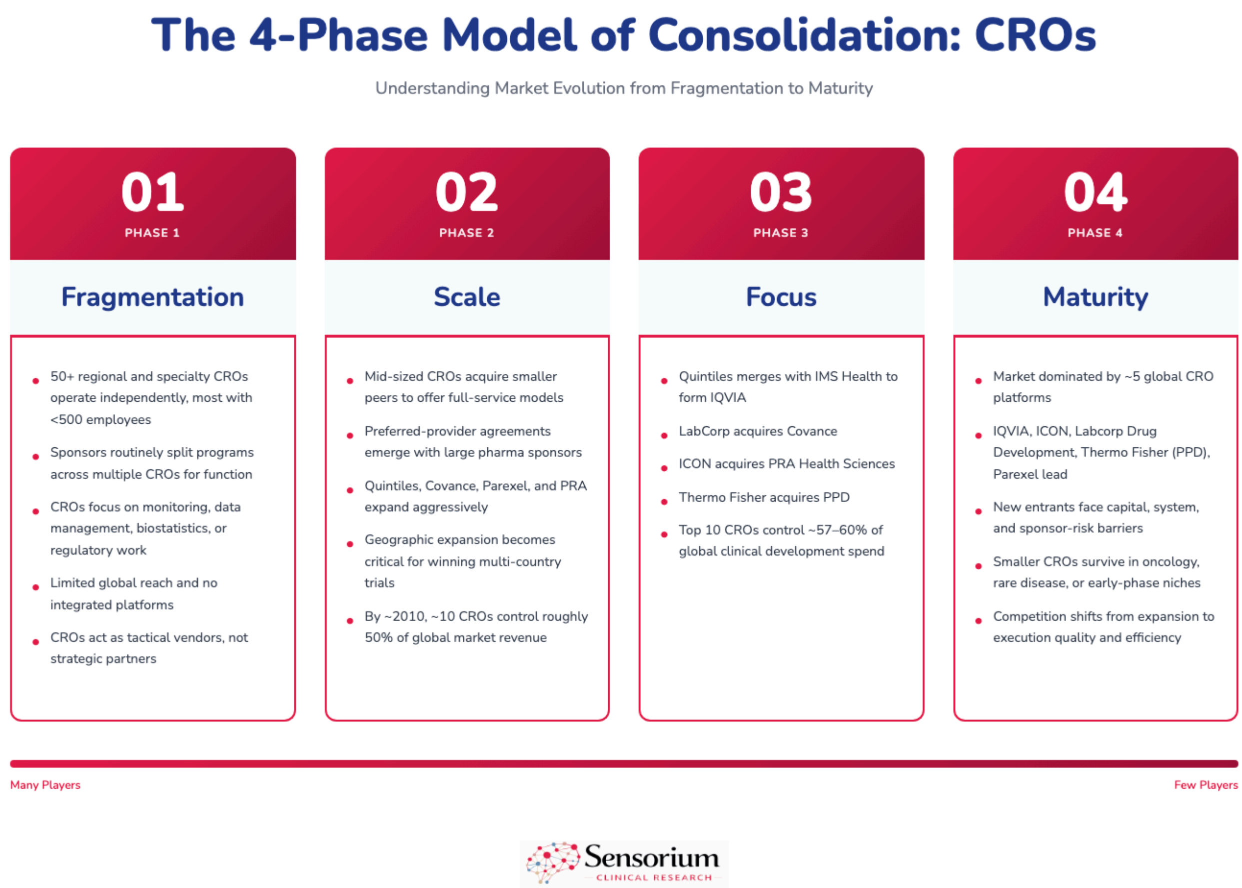
Phase 3: Mega-Consolidation (Continued)

Sponsors increasingly prioritized CROs with global scale, centralized data platforms, and broad service portfolios. Portfolio-level outsourcing became more common, with sponsors entrusting entire development pipelines to a small number of strategic partners.

For smaller CROs, competing head-to-head with these platforms became increasingly difficult. Many were acquired, exited the market, or repositioned themselves around niche offerings.

Phase 4: Maturity

2022 to Present



The CRO industry is now in a mature consolidation phase. The market functions as an oligopoly dominated by approximately five large firms with global reach and end-to-end capabilities. These organizations serve as primary outsourcing partners for most large and mid-sized pharmaceutical companies.

Smaller CROs continue to exist, but primarily in specialized niches such as oncology-focused trials, early-phase units, rare diseases, or highly technical services. Their success depends on depth of expertise rather than breadth of offerings.

Phase 4: Maturity (Continued)

New entrants face steep barriers to entry. Competing at scale requires global infrastructure, advanced technology platforms, robust compliance systems, and significant capital investment. Sponsor risk aversion further reinforces the dominance of established players.

At this stage, competition centers on execution quality, cost efficiency, and incremental innovation rather than market share expansion.

Why CRO Consolidation Accelerated

Several forces contributed to the CRO industry's rapid consolidation.

First, globalization of clinical trials increased the need for coordinated, multi-country execution. Sponsors required CROs capable of managing trials across dozens of countries simultaneously, with consistent protocols, data standards, and regulatory compliance.

Second, rising regulatory complexity favored firms with dedicated compliance infrastructure. As regulatory requirements became more stringent and varied across jurisdictions, smaller CROs struggled to maintain the necessary expertise and systems.

Third, sponsors sought to reduce vendor complexity by concentrating spend with fewer, larger partners. Managing multiple CROs created coordination challenges, data integration issues, and increased oversight burden.

Finally, access to capital enabled leading CROs to pursue aggressive acquisition strategies, reinforcing their market position and raising barriers for competitors.

Together, these forces created a self-reinforcing cycle that favored scale and led to durable concentration.

> ### Key Insight
>
> CRO consolidation was not driven by a single event or policy change. It resulted from the cumulative effect of sponsor preferences, regulatory evolution, and the economics of global clinical development.

Strategic Implications for the Industry

For sponsors, consolidation has simplified vendor management and improved consistency, but it has also increased dependence on a small number of providers. This concentration creates potential risks related to pricing power, service flexibility, and innovation pace.

For CROs, scale is now table stakes. Firms without global reach or differentiated expertise face limited strategic options. Success requires either achieving sufficient scale to compete broadly or developing deep specialization in high-value niches.

For the broader clinical research ecosystem, CRO consolidation has shaped how trials are designed, managed, and executed, influencing everything from site selection to data strategy. The dominance of large CROs affects site relationships, technology adoption, and the distribution of clinical trial activity.

Looking Forward

The CRO market structure is unlikely to reverse. Future changes will occur within the existing oligopoly rather than through the emergence of new large-scale competitors. Innovation and differentiation will increasingly come from specialized players and technology-enabled service models.

Conclusion

The CRO industry's consolidation followed a predictable four-phase trajectory driven by sponsor demand, regulatory complexity, and the economics of scale. What began as a fragmented market of regional service providers has evolved into a global oligopoly dominated by a handful of large firms.

This consolidation is largely complete. Future change will occur within the existing structure rather than through the emergence of new large-scale competitors.

The CRO experience provides a clear reference point for understanding consolidation dynamics across clinical research and beyond.

Continue the Series

For a deeper application of this framework to clinical research, with a specific focus on IRBs, CROs and clinical research sites, refer to the other parts of this white paper series:

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