Report

Outsourced Pharma Services

A high-growth market with strong underlying fundamentals is seeing high levels of M&A activity from both trade and private equity buyers.

Inside:

- Market overview of the following subsectors:
  - Contract Research Organisations (CROs)
  - Contract Development and Manufacturing Organisations (CDMOs)
  - Contract Packaging Organisations (CPOs)
  - Contract Sales Organisations (CSOs)
- Leading global players
- Industry and M&A trends
- Notable recent transactions

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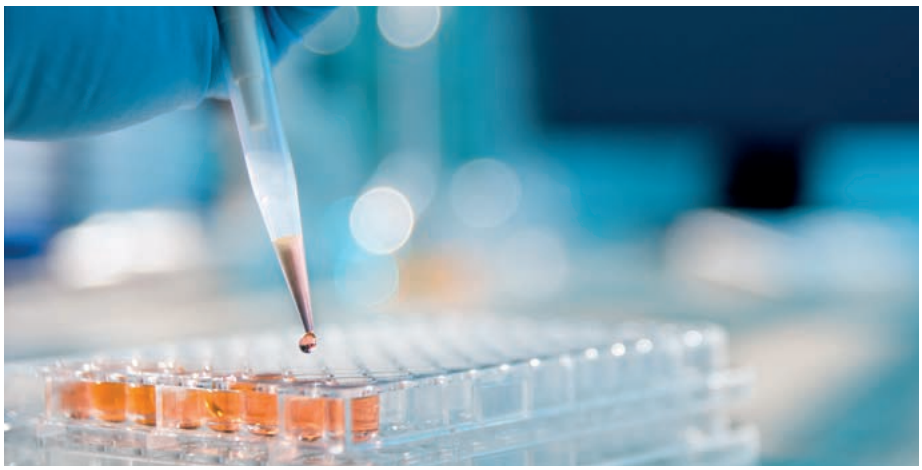
Welcome

Pricing pressure, patent expiries and increasing costs continue to drive strong growth in the pharma services market. These margin pressures are forcing pharma companies to rationalise their cost base and increasingly outsource many non-core activities. So much so, that these outsourcing specialists have become key commercial partners and integral parts of their teams.

In this report, we review the continued growth of the outsourced pharma services sector in the following sub-sectors: contract research organisations (CROs), contract development and manufacturing organisations (CDMOs), contract packaging organisations (CPOs) and contract sales organisations (CSOs). Within each sub-sector, we analyse the key trends and review notable recent transactions.

Such market dynamics have provided fertile ground for M&A activity. The pharma services market has consolidated rapidly as companies seek to add scale, broaden geographical presence and achieve synergies to gain competitive advantage. They are also expanding their service offerings in order to become full-service providers, simplifying their customers' operations.

The CRO market is a particularly good example of these trends as large CROs turn to acquisitions to expand their portfolios, seeking to become strategic partners of choice to their blue-chip customers. They have also begun moving into adjacent pharma services fields, including communications, consulting, and other commercialisation services, which have traditionally been provided by healthcare marketing and publication agencies. Examples include Syneos' acquisition



of Kinapse, and ICON's acquisition of MAPI Development. In parallel, the CDMO sector has continued to undergo consolidation (epitomised by Cambrex's acquisition of Avista Pharma Solutions), while the high growth of the biologics and advanced therapy manufacturing markets has attracted a number of CDMOs to enter these sub-sectors. Recent examples include Catalent's acquisition of Paragon Bioservices, and Thermo Fisher's acquisition of Brammer Bio.

Meanwhile private equity (PE) has been particularly active across the wider pharma services market, and responsible for much of the consolidation of the industry. Recent examples include Permira's acquisition of Quotient in the CRO space, Cambrex's acquisition by Permira in the CDMO sub-sector, Altamont Capital's acquisition of Publicis Healthcare Solutions in the CSO market - which has been rebranded Amplity Health - and Kohlberg & Co's acquisition of Bemis' medical packaging business in the CPO market.

We expect continued strong PE interest into 2020 and beyond, not least because the pharma services market is forecast to outstrip both GDP growth and pharma sector growth in the medium term.

We believe this growth, supported by attractive underlying fundamentals, will continue to attract investors and encourage strategic M&A in the sector.

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FX rates used in report: (average annual exchange rates)

	2014	2015	2016	2017	2018	2019 YTD
EUR/ USD	1.329	1.110	1.107	1.130	1.181	1.130
EUR/ GBP	0.806	0.726	0.819	0.877	0.885	0.874

Source: www.ofx.com

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Outsourced Pharma Services

The market is highly diversified, with thousands of companies providing a wide variety of services across the pharma life cycle - from early stage drug discovery to clinical trials, advertising and PR services. Although many of the larger pharma services companies offer a broad suite of associated or synergistic services, most players are small and offer specific expertise in niche services.

The market can be broadly divided into the following sub-sectors:

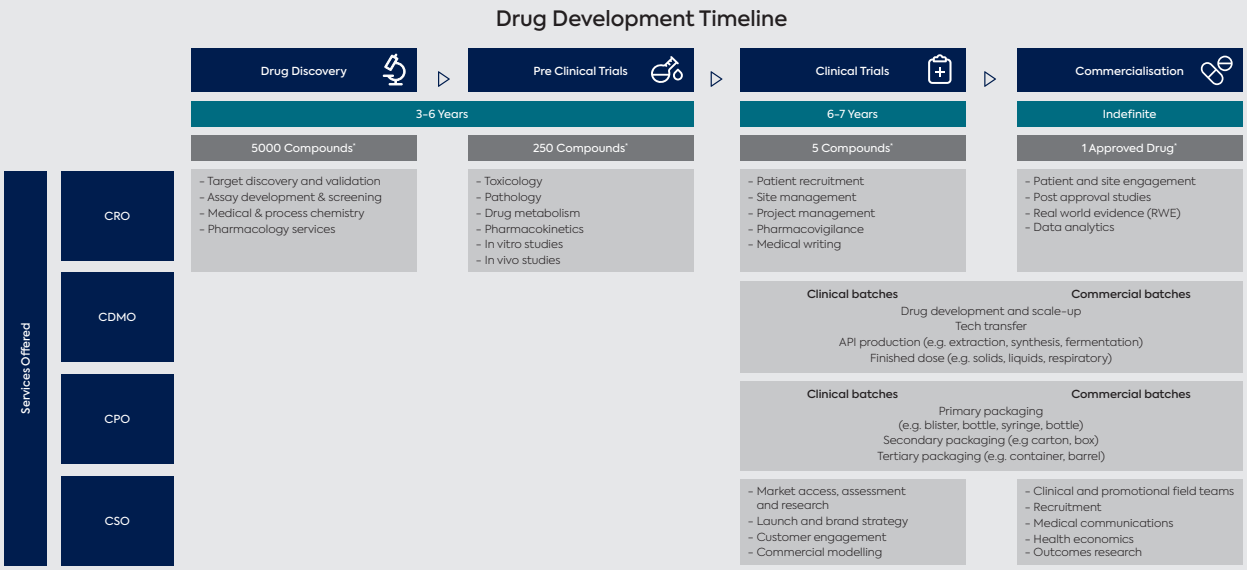
Contract Research Organisations (CROs) provide drug discovery, pre-clinical, clinical and post-approval research services and research support services to the pharma industry.

Contract Development and Manufacturing Organisations (CDMOs) provide drug development and manufacturing services to the pharma industry. Manufacturing activities are typically categorised into the manufacture of active pharma ingredients (APIs) and finished dosage forms (FDFs).

Contract Packaging Organisations (CPOs) provide packaging and labelling services to the pharma industry. Packaging activities are typically subdivided into primary, secondary and tertiary packaging.

Contract Sales Organisations (CSOs) provide sales, marketing and other commercialisation services to the pharma industry.

Overview of CRO, CDMO, CPO and CSO services across the drug development cycle



*Source: Clearwater International, illustrative number of compounds entering each phase of drug development for each approved drug.

Although a number of industry and M&A trends are specific to each of these sub-sectors, some trends are common across the pharma services industry:

Pharma pressures driving outsourcing trend

Although the fundamentals of the pharma industry remain attractive, increasing R&D costs and continued pressure on pharma companies' operating margins have encouraged the industry to outsource their non-core operations and rationalise their fixed cost bases, which has resulted in the significant growth of the pharma services market. Continued pressures on pharma, combined with significant headroom in outsourcing penetration today, are expected to drive high growth in the industry in the medium term.

Platform expansion

The pharma services market is consolidating as companies seek to add scale, broaden geographical presence and achieve synergies to gain a competitive advantage over their peers.

The "one-stop-shop"

Driven by the desire of pharma to reduce the number of outsourcers they use, pharma services companies are expanding their service offerings (either organically or inorganically through M&A) in order to become full-service providers, simplifying their customers' operations and capturing maximum share of their outsourcing expenditures.

Shift of expertise to outsourcers

Pharma services companies typically offer their expertise in specific services to multiple pharma companies, allowing them to accumulate significant know-how from multiple projects. This, combined with increasing outsourcing penetration and decreasing levels of in-house expertise, means that pharma companies are becoming increasingly reliant on their outsourced service providers.

Increasing uptake of technology

Technology and data are playing an increasingly important role across all pharma services sectors and early adoption of innovative technologies are increasingly becoming key differentiators.

High levels of private equity activity

PE has been highly active in the sector and responsible for much of the consolidation of the industry, often amongst the market leaders in their respective sectors. Private equity interest and activity in the sector is higher than ever before and PE bidders are becoming increasingly competitive with strategic acquirers in M&A situations, further illustrating their eagerness to participate in the industry.

Contract Research Market

Key Stats

Global CRO market was valued at

c.€35bn in 2017

forecast to reach c.€40bn by 2022[7]

Current market growth of

c.10% CAGR

set to accelerate to 12% through to 2022[7]

Reasonably fragmented market

with top 9 players

accounting for c.60% of market[3]

CRO penetration of pharmaceutical research market expected to

reach 50%

by 2020[8]

Overview of sub-sector

Although the market can be traced back to the mid-1900s the sub-sector as we know it today only began to emerge in the 1980s, with the foundation of Quintiles (now IQVIA), Parexel and PPD – all of which are now leading CROs. CROs have evolved to become strategic partners of their sponsors/pharma companies and high-growth of the market is the result of the following factors:

- **The need to reduce R&D expenditure**
  With rising costs of R&D, it is becoming increasingly inefficient for innovators to maintain development teams and facilities. Outsourcing has allowed innovators to rationalise fixed R&D cost bases and achieve operational efficiencies.
- **Increasing complexity of drugs and clinical trials**
  The complexity of therapeutics in development is constantly increasing, making them more costly and challenging to develop in-house. Furthermore, heightened regulatory protocols have increased the duration, cost and complexity of clinical trials.
- **Time and efficiency**
  Innovators are increasingly reliant on CROs to optimise R&D activities, shorten development timelines, reduce attrition rates and expand clinical trial management capabilities globally.
- **Expanding CRO solutions and technologies**
  CROs are constantly expanding their addressable markets by broadening their service offerings, capturing an increasing share of pharma R&D expenditure. Investment in technology and big data will continue to play an important role in the expansion of the CRO sub-sector.

As a result, CRO penetration has steadily grown, accounting for c.34% of biopharma clinical development spend in 2011 and expected to increase to c.50% by 2020[7] (valuing the global clinical CRO market at €13.7bn in 2020[7]).

Despite the growing range of services offered by CROs, they can broadly be grouped into the three following categories:

- **Pre-clinical**
  Pre-clinical services can be sub-divided into drug discovery and pre-clinical trial services. Drug discovery services are typically lab-based and involve the identification of promising 'lead compounds'. Once selected for further research, the molecules then enter pre-clinical trials. Assuming the compound shows signs of efficacy and is safe, the innovator will submit an Investigational

New Drug Application (IND). If approved by regulators, the innovator has permission to proceed with clinical trials.

- **Clinical**

  Clinical trials are typically conducted in three distinct Phases (I, II and III), each with different objectives, increasing numbers of patients and costs.

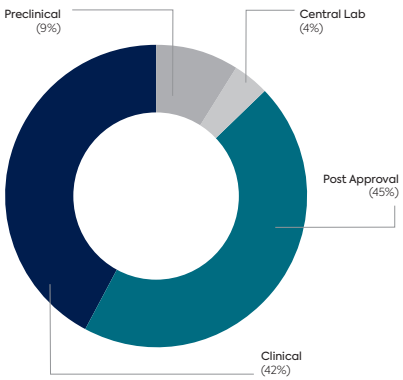
  - Phase I trials are focused on basic safety and pharmacology in patients who may not necessarily have the target disease (c.20-100 patients). These studies are typically conducted at specialised research centres and are designed to monitor the metabolic reactions and patient tolerance to the compounds at multiple dosage ranges.
  - Phase II and III trials are primarily efficacy studies on patients afflicted by the target disease. Phase II trials (often known as proof of concept trials) test efficacy alongside dose ranging and further safety testing (c.100-500 patients). Phase III trials are much larger (c.500-1000 patients), in which advanced efficacy and safety testing are conducted at multiple testing centres. These are typically the longest and most expensive trials, and regulatory authorities typically require two successful Phase III trials to obtain approval.

- **Post Approval**

  Post-approval, regulatory agencies typically require innovators to collect and periodically report additional safety and efficacy data (sometimes referred to as real world evidence or 'RWE' studies). If marketed internationally then surveillance data from all countries must be collected.

Across clinical and post-approval trials, many CROs have developed a full suite of services allowing innovators to fully outsource their R&D activities and partner with CROs in the design and delivery of research operations. Services CROs typically offer include trial planning, project management, patient recruitment, site access, clinical staffing, patient monitoring, pharmacovigilance and data analysis.

CRO market by segment



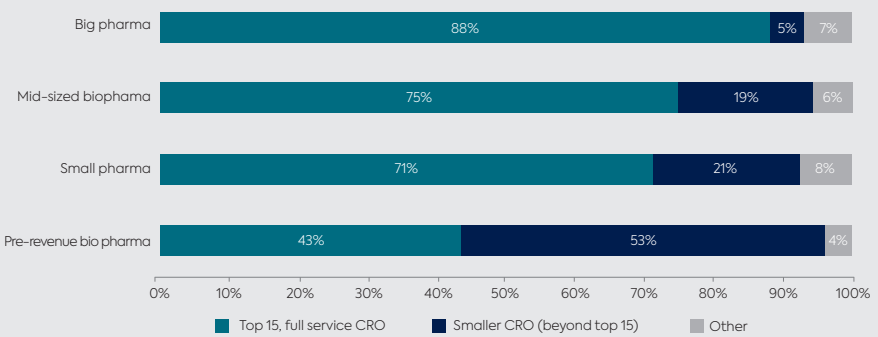
Source: Credit Suisse Research[7]

The market remains reasonably fragmented, with the top nine players accounting for c.60% of the c.€35bn global market[7] and several hundred smaller players making up the remainder of the market[7].

The market has undergone a period of intense consolidation over the last decade as a result of numerous landmark mergers (e.g. LabCorp/Chiltern, INC/InVentiv, LabCorp/Covance), primarily driven by the desire of Big Pharma to partner with fewer full-service providers.

Despite this, among small and mid-sized players, there is often a preference to partner with mid-sized CROs that will focus on maintaining a long-term quality relationship. Small and mid-sized biopharmaceutical companies are also more likely to partner with CROs with a therapeutic focus or specific expertise.

Large biopharmaceutical companies prefer to outsource to full-service CROs



Source: Credit Suisse Research[7]

Leading Global Players

Note: 2018 Total company revenues Source: CapIQ

CRO M&A activity - notable recent transactions

Date	Acquiror	Target	Enterprise Value (€m)	EV/LTM Revenue	EV/LTM EBITDA	Strategic Rationale
19/07/2019	Permira	Quotient (GHO Capital)	NA	NA	NA	- PE Deal - Leading European CRO
12/06/2019	Dassault Systemes	Medidata	5,144	8.8x	NM	- Entry into CRO market - Cloud based digital solutions with clinical development and RWE applications
17/04/2019	LabCorp	Envigo Pre-Clinical CRO business	429	3.1x	NA	- Enhances early-stage services - Adds respiratory research expertise
13/02/2019	Charles River	Citoxlab	448	NA	13.8x	- Enhances early-stage services - Grows geographic footprint
13/02/2018	Charles River	MPI Research	647	3.3x	11.7x	- Enhances early-stage services - Larger biotech customer base
19/12/2017	JSR	Crown Biosciences	292	4.9x	35.5x	- Entry into US CRO market - Unique translation medicine platform
07/08/2017	PRA	Symphony	449	2.6x	NA	- Access to cloud-based RWE data analytics platform
31/07/2017	LabCorp	Chiltern	1,018	2.2x	12.6x	- Access to high-growth emerging pharma - Oncology expertise
30/07/2017	Evotec	Aptuit	255	3.2x	25.9x	- Adds IND enabling CRO services - Builds on drug discovery expertise
20/06/2017	Pamplona	Parexel	4,502	2.4x	14.6x	- PE Deal - Leading global CRO

Source: CapIQ, Company information, press releases Notes: 'NA': not available, 'NM': non meaningful

CRO M&A trends

The sub-sector continues to consolidate, albeit there has been a slowdown in mega-mergers amongst the industry heavyweights over the past decade.

Key drivers include:

- **Increased competition for niche CRO assets**
  The large CROs are continually seeking small, niche acquisitions to fill any gaps in or expand their existing portfolios. As smaller and specialised CRO customer bases tend to be comprised of small and mid-sized biopharma, acquiring such companies allows larger CROs to better compete with small CROs. Charles River's acquisition of MPI Research in 2018 for €647m demonstrates both of these trends, providing Charles River with MPI's ototoxicity and abuse liability capabilities as well as its biotech client base.
- **Entry into emerging therapeutic areas**
  Rather than develop therapeutic area expertise in new and complex areas in-house, many CROs have used M&A as a means to acquire this expertise. An example is Atlantic Research Group's 2018 acquisition of CCA, which gave it access to CCAs, expertise in the high-growth rare disease clinical trial segment.
- **Entry into high-growth mid-sized and emerging biopharma segments**
  Although big-pharma have the largest CRO outsourcing budgets and make up a significant portion of the global CRO market, the highest growth segment is emerging and mid-sized biopharma companies[7] which prefer to partner with smaller, more specialised CROs. In order to participate in this high growth, large CROs have used M&A as a means of adding more emerging and mid-sized biopharma to their customer portfolios, as demonstrated by LabCorp's acquisition of Chiltern for €1bn in 2017.
- **Increased interest in data-driven CRO services**
  Data and analytics are becoming increasingly important in the delivery of CRO services and a number of companies specialising in these fields have been M&A targets in recent years. The use of big data in trials is growing rapidly and has improved the quality of data collection, allowing improved analysis of large data sets. An example of this is PRA Health Sciences' acquisition of Symphony Health in 2017 for €449m, providing PRA with Symphony's leading cloud-based integrated data and analytics solutions, primarily used in Real World Evidence (RWE) studies.
- **Private equity continues to be bullish on CROs**
  Private equity has played a key role in the consolidation of the CRO market (e.g. Pamplona/Parexel, Advent/InVentiv Health). Although these are examples of large PE transactions, PE continues to be active in the mid-market for CRO assets. Examples include Permira's acquisition of Quotient from GHO Capital and CBPE's acquisition of UK-based CRO Simbec-Orion in 2019.

Contract Development and Manufacturing Market

Key Stats

c.€62bn

Global CDMO market in 2017

expected to reach c.€89bn by 2022[4]

Sector growth of

c.5.0 – 6.5%

CAGR is outstripping pharma sector growth[3]

Highly fragmented sector

top 5 players

only account for c.15% of global market[3]

CDMO penetration of pharma development and manufacturing market set to increase from 30% in 2017

to 40%

in 2020[3]

Overview of sub-sector

As innovator pipelines have deepened and the complexities of developing and manufacturing more recent generations of pharma (including biologics) have increased, the need to simplify manufacturing operations and reduce operating expenditure has led to the emergence of the CDMO industry.

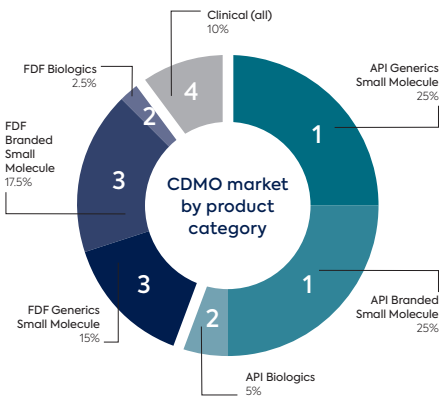
Although many CDMOs today are multi-disciplinary, there are very few true one-stop-shops and pharma companies will typically use a range of CDMOs across their product portfolios selected on development/manufacturing technologies or expertise, manufacturing capacity or geographical location.

CDMO activities can broadly be divided into three fields: product development, manufacture of active pharmaceutical ingredients (API), and manufacture of finished dosage forms (FDF) - all of which are required from the production of small-scale clinical batches to large-scale commercial production. As such, once a dedicated manufacturing line is established and validated at a CDMO, it is often difficult, time consuming and costly to switch CDMOs, meaning partnerships between pharma companies and their CDMOs are often long-lasting.

Despite high levels of M&A activity, the sub-sector remains highly fragmented. The top five players have approximately 15% total market share and there is a long tail of over 300 companies worldwide offering CDMO services[3].

1 API

The commercial small molecule API market is roughly divided equally between originator products and generics. Although generic APIs typically deliver lower margins to manufacturers, this is often compensated by the ability to supply multiple customers with the same API.



Source: Clearwater International

2 Biologics

Despite small molecule commercial revenues accounting for the majority of the CDMO market today, biologics are the highest growth sub-sector as a result of increasing numbers of biologic approvals and the emerging biosimilar market (as increasing numbers of biologics reach patent expiry).

3 Finished Dosage Forms (FDF)

FDF represents a smaller share of the market than API, a majority of which is accounted for by oral solids. However, the oral solids market is relatively mature and lower growth than other FDFs including liquids, semi-solids and injectables.

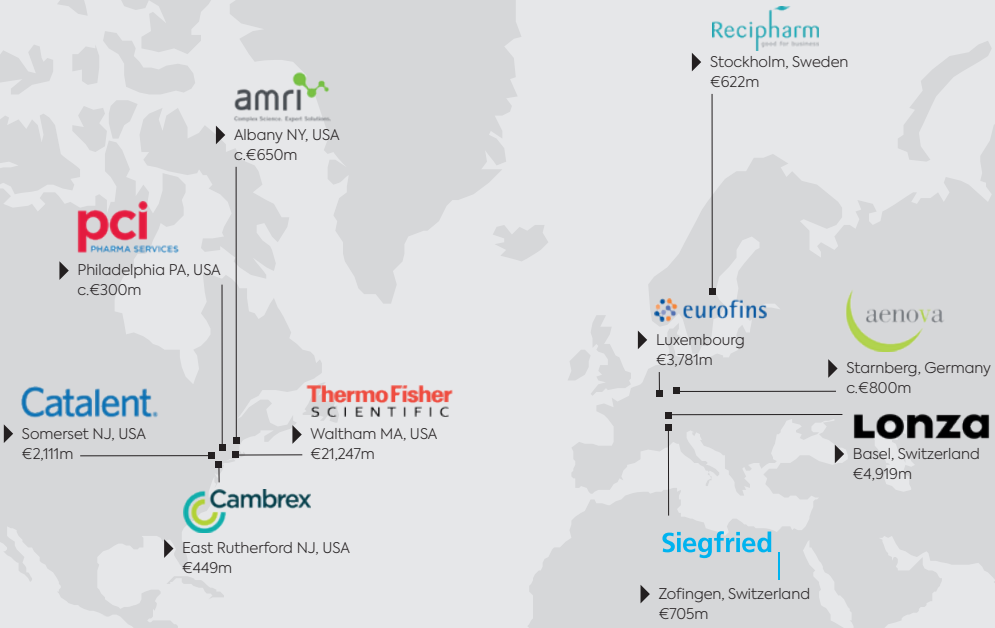
Injectables is the highest growth FDF segment. High levels of demand for injectables (primarily resulting from the growth in biologics and oncolytics) combined with high technological barriers to entry has resulted in manufacturing shortages of sterile injectables. Pre-filled syringes (PFS) and other more complex injectable delivery systems (including auto-injectors) are the categories undergoing highest levels of growth.

4 Clinical

Despite clinical manufacture representing only a minority of the CDMO market, it is crucial for securing customers and building relationships that support commercial scale manufacturing.

"The CDMO sub- sector remains highly fragmented, with the top five players accounting for 15% total market share."

Leading Global Players



Note: 2018 Total company revenues. Source: CapIQ

CDMO M&A activity - notable transactions

Date	Acquiror	Target	Enterprise Value (€m)	EV/LTM Revenue	EV/LTM EBITDA	Strategic Rationale
10/09/2019	HIG Capital	BioVectra (Mallinckrodt)	226	NA	NA	- PE deal - API CDMO
07/08/2019	Permira	Cambrex	2267	4.4x	17.4x	- PE deal - Leading global CDMO
15/04/2019	Catalent	Paragon Bioservices	1,062	6.0x	21.4x	- Increased exposure to high-growth gene and cell therapy markets
25/03/2019	Thermo Fisher	Brammer Bio	1,503	8.5x	NA	- Increased exposure to high-growth gene and cell therapy markets
20/11/2018	Cambrex	Avista Pharma Solutions	287	5.3x	NM	- Adds early stage small molecule development and testing services
23/07/2018	Cambrex	Halo Pharma	363	4.0x	15.7x	- Adds small molecule FDF capabilities - Vertical integration
05/10/2017	Fosun	Gland Pharma	1,142	NA	NA	- Adds sterile injectable capabilities - Technology to be used in China market
19/09/2017	Catalent	Cook Pharmica	794	5.3x	17.3x	- Increased exposure to biologics market - Cell line development to FDF services
06/06/2017	Carlyle/GTCR	AMRI	1,414	2.5x	22.2x	- PE deal - Leading global CDMO
15/05/2017	Thermo Fisher	Patheon	6,563	3.7x	20.6x	- Entry into CDMO market - Complimentary biopharma customer base

Source: CapIQ, Company information, press releases Notes: 'NA': not available, 'NM': non meaningful

CDMO M&A trends

M&A across the CDMO sub-sector continues to be highly active and recent months have been marked by high volumes of CDMO transactions globally, including some large landmark transactions. We have identified a number of key M&A trends:

- **Platform expansion and the 'one-stop-shop'**
  The desire of pharma to deal with fewer and larger CDMOs, with broad development and manufacturing capabilities, has driven M&A in the sub-sector as companies look to expand services offered, geographic footprint and client portfolios. Examples of this include Lonza's €5.3bn acquisition of Capsugel, and Cambrex's €363m acquisition of Halo Pharma.

- **Premium valuations for complex and high-margin manufacturing capabilities**
  CDMOs with niche and complex manufacturing capabilities in high growth and high margin end markets have commanded the highest M&A multiples. Examples of this include:

- Sterile injectables – Fosun's 2017 acquisition of Gland Pharma for €1.1bn (c.16x LTM EBITDA)

- Biologics – Catalent's 2017 acquisition of Cook Pharmica for €794m (17.3x LTM EBITDA)

Although these sub-sectors continue to be highly valued, 2019 has already seen a number of landmark deals at unprecedented valuations for advanced therapy (gene & cell therapy) CDMOs. This is due to the rapid growth in the number of advanced therapies being developed, a bottleneck in manufacturing capacity, and the high levels of complexity involved in developing and manufacturing these therapies. Examples of two such transactions include Catalent's acquisition of Paragon Bioservices for €1.0bn (21.4x LTM EBITDA), and ThermoFisher's acquisition of Brammer Bio for €1.5bn (8.5x LTM revenue).

- **Pharma streamlining manufacturing operations**
  As pharma companies continue to reduce their in-house manufacturing footprints and operational expenditure, many are divesting their non-core manufacturing facilities (often with supply contracts) to peers, CDMOs and PE investors which are able to operate them as standalone CDMOs. Examples of recent pharma facility divestitures include Zentiva's acquisition of Sanofi's Ankleshwar facility for €33m, and Thermo Fisher's acquisition of GSK's Cork API facility for €90m in 2019.

- **New entrants**
  A number of new entrants have been attracted to the CDMO industry and have entered through M&A. Examples include Thermo Fisher's 2017 acquisition of Patheon for €6.6bn, and Asahi Glass' 2016 acquisition of CMC Biologics for €450m.

- **Increasing levels of private equity activity**
  PE has played a significant role in the consolidation of the CDMO industry and a number of CDMO PE buyouts have occurred in the last year. In addition to the large transactions noted above, PE activity has also been strong in the mid-market. Examples include Permira's acquisition of Cambrex and GHO's acquisition of Sterling Pharma Solutions in 2019.

Contract Packaging Market

Key Stats

Global CPO market valued at

c.€62bn

in 2016, expected to reach c.€93bn by 2022[10]

Market growth forecast at CAGR of

c.6.3%

from 2016 to 2022[10]

US represents

c.33%

of global pharma packaging market[10]

Asia-Pacific forecast to be highest growth region

growing at 12.2%

CAGR from 2014 to 2025[12]

Overview of sub-sector

Pharma packaging has traditionally been viewed as an extension of manufacturing services provided by CDMOs, many of whom are seeking to offer full-service manufacturing solutions to their customers. However, CPOs are taking a prominent role in the market due a number of factors including increased demand, the increasing complexity of packaging requirements as more innovative products are brought to market, and new and more stringent packaging regulations introduced across multiple territories, including serialisation.

CPO activities can broadly be divided into:

- **Packaging - the development and production of:**
  - Primary packaging (e.g. blister packs, bottles, syringes and inhalers)
  - Secondary packaging (e.g. boxes and cartons)
  - Tertiary packaging (e.g. crates and containers)
- **Labelling and Artwork Management Solutions (LAMS)**
  Although a small segment of the market it is undergoing substantial growth, primarily as a result of increased regulation in the industry, including serialisation and anti-counterfeit legislation.

A number of recent trends are reshaping the CPO industry and the pharma supply chain more broadly, with early adopters of technology and efficient and environmentally-friendly processes continuing to gain market share as partners of choice.

Postponement packaging

A continuing trend in the CPO industry is the adoption of postponement packaging to improve efficacy and reduce wastage. Traditionally, CPOs would provide bulk packaging of single products for specific markets, which would then be shipped to the market and stored until required. This approach often results in high inventory costs and significant levels of wastage when products exceed their shelf-lives.

Postponement packaging, however, involves the late-stage customisation of blank packaging, meaning CPOs can react quickly to market-specific demand while reducing wastage and inventory storage costs. The large number of languages globally, combined with the increasing levels of packaging regulation, are likely to further increase the adoption of postponement packaging by CPOs.

Serialisation

Serialisation legislation introduced globally, including the Drug Supply Chain Security Act (DSCSA) in the US and the EU's Falsified Medicines Derivative (FMD), has resulted in the introduction of mandatory barcodes on pharma packaging and the transfer of large volumes of data in the supply of medicines.

The legislation has forced pharma manufacturers to reconfigure their operations, often at significant cost. This has meant that many manufacturers have struggled to meet the 2019 enforcement dates of both the EU is FMD and the DSCSA. Although the industry is still struggling to come to terms with the implications of serialisation, it has the

potential to create a more efficient, safer and integrated approach to bringing drugs to market, and will likely have a long term impact on the pharma packaging industry.

Despite the rapid pace of technological developments in the broader pharma industry, the pharma supply chain is significantly behind in terms of digitisation, with paper-based processes the norm in many organisations. Partly as a result of serialisation, the industry is increasing its digitalisation of data in the supply chain, which provides opportunities to implement automated processes and increase efficiencies.

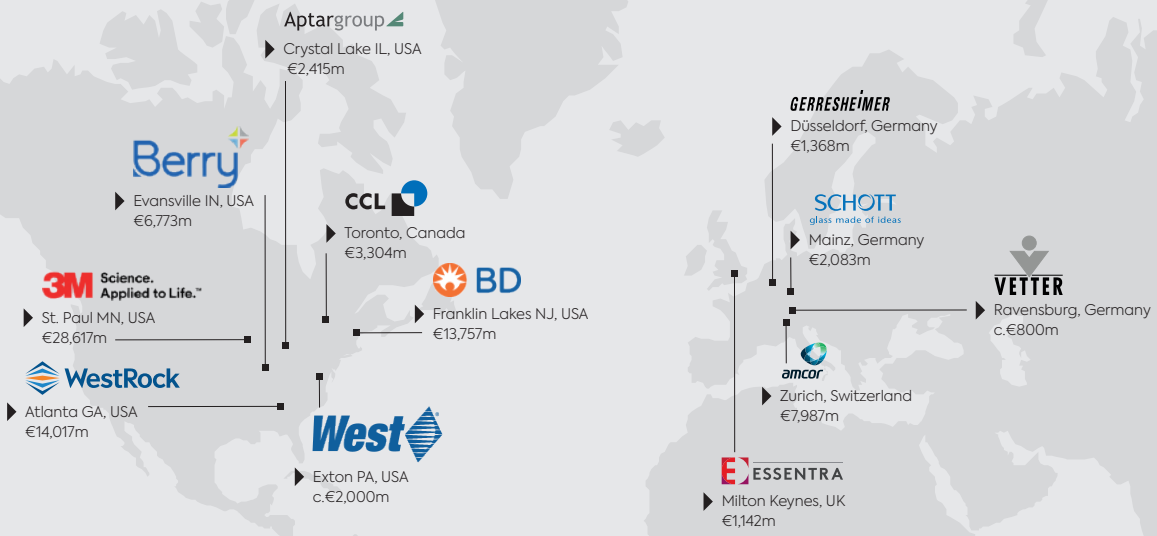
Environmental impact

The reduction in the use and wastage of plastic across the pharma supply chain in favour of more eco-friendly and biodegradable packaging solutions will continue to be a trend for the foreseeable future.

An example of this is the increased use of the recyclable polyethene terephthalate (PET), which can be broken down to molecular level and converted back into PET, in pharma packaging.

Broader operational improvements across the pharma supply chain (including postponement) will not only improve profit margins but reduce wastage across the world, reducing the environmental impact of the industry.

Leading Global Players



Note: 2018 Total company revenues. Source: CapIQ

CPO M&A activity – notable recent transactions

Date	Acquiror	Target	Enterprise Value (€m)	EV/LTM Revenue	EV/LTM EBITDA	Strategic Rationale
09/09/2019	Essentra	Nekicesa (GED Capital)	NA	NA	NA	- Increased exposure to pharma sector - Secondary packaging services
22/07/2019	Arsenal Capital Partners	Healthcare Packaging Business (Clariant)	280	2.3x	13.2x	- PE Deal - Specialist protective packaging products
02/07/2019	Kohlberg & Co	Nelipack Healthcare Packaging (Mason Wells)	NA	NA	NA	- PE Deal - Custom rigid packaging products
25/06/2019	Kohlberg & Co	3 Amcor Manufacturing Facilities	349	2.3x	NA	- PE Deal - Bemis' medical packaging business
06/08/2018	Amcor	Bemis	5739	1.7x	11.8x	- Creates global leader in consumer market - Increased exposure to healthcare
26/07/2018	AptarGroup	CSP Technologies	448	3.8x	13.0x	- Adds proprietary protective packaging technologies, focused on pharma market
07/02/2017	BWay	Mauser	2,035	1.5x	10.5x	- Adds specialist bulk containers to existing rigid general line packaging capabilities
31/07/2015	Berry Group	AVINTIV	2,208	1.3x	10.8x	- Leader in healthcare plastics packaging - Sector leadership in plastics
28/07/2015	Gerresheimer	Centor	653	4.3x	9.8x	- Boosts drug primary packaging services - US leader in oral plastic vial market
30/06/2015	Corning	Gerresheimer Pharma Glass Tubing Business	196	2.4x	9.8x	- Entry into high-growth pharma market - Specialist in pharma glass tubing

Source: CapIQ, Company information, press releases Notes: 'NA': not available, 'NM': non meaningful

CPO M&A trends

Pharma packaging companies trade at premium valuations
Driven by the attractive fundamentals of the pharma industry and its high regulatory and technical requirements, packaging companies serving this sub-sector typically achieve higher valuations than other packaging companies.

Premium valuations linked to complex or proprietary packaging technologies
The highest pharma packaging valuations have typically been achieved by companies offering highly differentiated, hard to replicate, and often proprietary packaging technologies. An example of this is AptarGroup's acquisition of CSP technologies in 2018 for €448m (13.0x LTM EBITDA multiple), adding CSP's unique and proprietary protective packaging technologies to its portfolio.

Generalist packaging companies' increasing exposure to attractive pharma segment
The attractiveness of the pharma packaging market has led to many generalist packagers acquiring specialised, pharma-focused packagers, typically to increase their growth and margins. An example of this is Essentra's 2019 acquisition of Nekicesa from GED Capital.

PE activity remains strong
Although perhaps in lower volumes than in other outsourced pharma services sectors, PE has been and continues to be active in the pharma packaging market. In addition to those noted above, examples of other large-cap packaging transactions include Astorg's acquisition of Nemera from Montagu in 2018, and Partners Group's acquisition of PCI Pharma Services in 2016.

Contract Sales Market

Key Stats

Global CSO market valued at

c.€5bn

in 2017, expected to reach c.€8bn by 2023[8]

Forecast CSO market growth of

c.9.6%

CAGR through to 2023[8]

Less mature market, with CSO penetration of global pharmaceutical sales expenditure estimated at

14% today[9]

Consolidated market,

dominated by

few global players

Overview of sub-sector

CSOs offer complete commercial packages and pharma companies engage with CSOs on a broad service level to create a complete product commercialisation strategy.

CSOs have established expertise in such areas as market analysis, targeting, access and reimbursement. They also offer call centres, nurse educators, medical science liaisons and digital platforms with built-in reporting to keep programmes on track. And, because CSOs have the advantage of working with a variety of customers across many specialties, their insights draw from a wide experience which provides a value-add to their customers.

The use of data and technology has become increasingly prominent in the CSO market and a key competitive differentiator for many customers. CSOs have access to unprecedented levels of data and digital marketing resources and are focused on the holistic and multi-channel commercialisation strategies of payers and prescribers, rather than being focused primarily on personal promotion.

Although the primary drivers of CSO market growth are similar to CDMOs and CROs, the CSO industry is less mature than either of these sub-sectors and, although high-growth, global CSO penetration is estimated at only 14% today[9], in a market valued at c.€5bn[8].

The lower penetration of CSOs versus CDMOs and CROs is primarily attributed to the diverging regulatory dynamics in their activities. While CROs and CDMOs have benefitted from a global harmonisation of regulatory standards, sales protocols differ on a country by country basis.

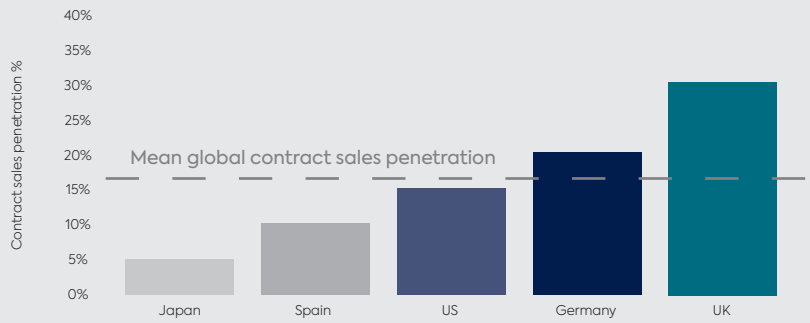
This makes it more difficult for CSOs to offer a homogenous service offering across multiple territories and means their offerings need to be tailored on a country by country basis. This represents an opportunity to CSOs which are able to offer their customers country specific teams and expertise. As such, CSO penetration levels tend to be highest in niche and fragmented markets versus larger homogenous territories where it is easier for pharma to build sales forces in-house. For example, CSO penetration is significantly higher in the UK (c.30%[9]) than in the US (c.15%[9]) and Japan (c.5%[9]).

Another key difference which may contribute to lower CSO penetration levels is the nature of their relationships with customers. While they offer fast and flexible salesforce solutions, contracts tend to be smaller, shorter term and can end abruptly, with less opportunity for follow-up work.

Although big pharma CSO contracts represent the highest value share of the CSO market, CSO penetration is significantly higher amongst small and mid-sized pharma and growing at a faster rate. Many of the small and mid-sized pharma companies are emerging businesses and typically have limited capital, smaller portfolios of specialty products, and a greater need to mitigate the risks associated with building a commercial footprint. Therefore, partnering with CSOs is seen as a more flexible and cost-effective solution amongst these companies.

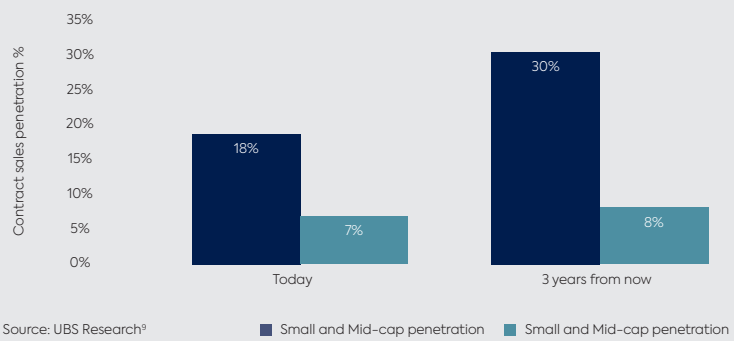
As with CDMOs and CROs, pharma companies are looking for fewer, global strategic partners that offer multiple services across multiple geographies, a trend which has driven intense consolidation amongst the leading players in the industry. However, there is still room in the market for specialised and geographically focused businesses which are able to compete on a local level against the global players.

CSO penetration remains relatively low



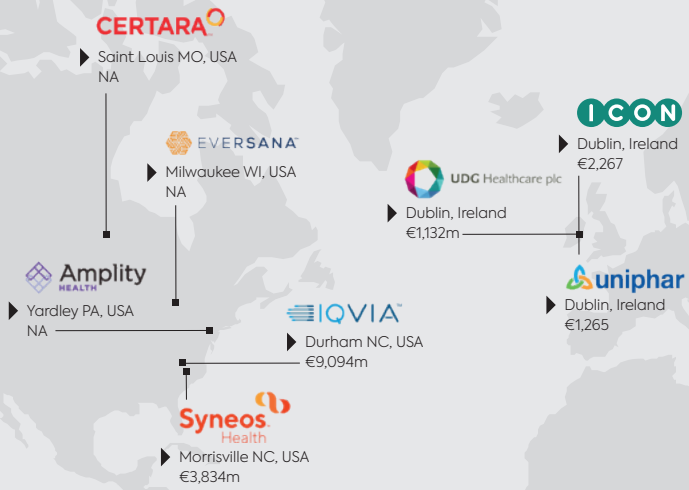
Source: UBS Research[9]

CSO penetration growth expected to be higher amongst small and mid-sized biopharma



Source: UBS Research[9]

Leading Global Players



Note: Total company revenues. Source: CapIQ

CSO M&A activity - notable recent transactions

Date	Acquiror	Target	Enterprise Value (€m)	EV/LTM Revenue	EV/LTM EBITDA	Strategic Rationale
31/01/2019	Altamont Capital	Amplity	NA	NA	NA	- PE deal - CSO and commercialisation business
21/05/2019	UDG	Putnam Associates	79	NA	11.1x	- Expands commercial services offering - Commercialisations strategy consultancy
20/08/2018	Syneos	Kinapse	106	NA	NA	- Expands scale in key growth markets - Enhances commercialisation services
02/07/2018	UDG	Create NYC	50	NA	8.6x	- Expands commercial services offering - Commercial communications agency
27/07/2017	ICON plc	MAPI Development	129	2.5x	NA	- Expands heath outcomes research and commercialisation services - PE deal
11/07/2017	EQT	Certara	744	NA	NA	- Tech-enabled services - Adds commercial services platform
10/05/2017	INC Research	inVentiv Health	4,155	2.1x	15.4x	- Consolidation of CRO businesses - Expands commercial services offering
21/10/2016	UDG	STEM Marketing	94	NA	15.3x	- Adds commercial consultancy services - PE deal
01/08/2016	Advent	inVentiv Health	3,400	1.7x	11.1x	- Leading commercial services platform - Adds leading global technology-enabled services platform
03/05/2016	Quintiles	IMS	11,524	4.3x	17.9x	- PE Deal - Leading global CRO

Source: CapIQ, Company information, press releases Notes: 'NA': not available, 'NM': non meaningful

CSO M&A trends

CSO deal trends

Recent mega-mergers have reshaped the CSO industry
The leading players in the industry have undergone a wave of consolidation over the last five years. Two notable examples are Quintiles' €11.5bn merger with IMS in 2016, creating IQVIA and INCs €4.2bn merger with InVentiv, creating Syneos.

Platform expansion
Recent M&A in the sub-sector has been driven by the desire to consolidate but also expand service portfolios outside of traditional CSO services into complimentary adjacent fields, driven by pharma's wish to work with fewer outsourced service providers.
An example of this has been Ashfield's entry into the commercialisation consultancy and communications sectors, with its acquisitions of Putnam Associates in 2019 for €79m, Create NYC in 2018 for €50m, and STEM Marketing in 2016 for €94m.

Large players consolidating CRO and CSO operations
A number of the larger CRO providers have achieved substantial synergies by adding commercialisation services to their portfolios through M&A, allowing them to provide an 'end-to-end' solution to their clients throughout the drug life cycle. Examples of such transactions include INC's acquisition of Syneos and Quintiles' acquisition of IMS.

Increasing importance of data
The use of data and technology has revolutionised the CSO and broader pharma commercialisation market.
A number of recent deals have underlined the importance the CSO market places on having access to data and technologies which can provide a competitive advantage over peers. Although Quintiles' merger with IMS is the most obvious example of this, other technology-driven transactions have occurred recently, including Syneos' acquisition of Kinapse for €106m and PPD's acquisition of Evidera in 2016.

Private equity has consolidated CSO sub-sector
PE activity amongst the leading players in the sub-sector has driven its consolidation (examples include Advent/InVentiv, 3i/Quintiles, TPG/IMS). More recent examples of PE activity in the sector include Altamont Capital Partners' acquisition of Publicis Healthcare Solutions (a leading global CSO) from Publicis Group (rebranding the business as Amplity) and EQT's €744m acquisition of Certara in 2017.

"Although Big Pharma CSO contracts represent the highest value share of the CSO market, CSO penetration is significantly higher amongst small and mid-sized pharma."

Our recent transactions

With 16 offices around the world and deals completed in 32 countries, our team makes us a natural choice for transactions requiring knowledge of, and access to global markets.

The healthcare team has completed nearly 100 healthcare related deals - 20 of these deals have completed within the last 18 months, The dedicated team provide in-depth knowledge and industry experience to every project. The business has more than 250 staff across Europe, North America and Asia and running throughout our business is an overriding commitment to exceptional outcomes for our clients.

uniphar

acquired

DURBIN

Acquisition
Undisclosed

PROCLINICAL

sold to

ICS Independent Clinical Services

Sell-side
Undisclosed

ORDESA

acquired

Colnatur

Sell-side
Undisclosed

Gimv MERIEUX DEVELOPMENT

acquired

Stiplastics Healthcaring

Buy-side
Undisclosed

LDC
Private Equity Less Ordinary

MBO of

FISHAWACK
group of companies

Buy-side
Undisclosed

THE CREATIVE ENGAGEMENT GROUP

sold to

HUNTSWORTH

Sell-side
Undisclosed

chase
connecting smarter people.

received investment from

Vespa Capital

Sell-side
Undisclosed

medichem

acquired a majority stake in

CN ZHOU RUICK

Buy-side
Undisclosed

farmalíder
INNOVATIVE PHARMACEUTICAL CENTER

sold a minority stake to

Ascendis HEALTH

Sell-side
Undisclosed

Peckforton Pharmaceuticals

sold to

Abbey Pharma Limited

Sell-side
Undisclosed

NUTRAMINO

sold to

glanbia

Sell-side
Undisclosed

Neolab Holdings Limited

sold to

DCC

Sell-side
Undisclosed

Our international healthcare team

With offices in Europe, the US and Asia, our team can deliver seamless, integrated global advice to SME/owner-managed, corporate and private equity clients. For more information about any of these topics or how we can assist your business, please contact:

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