A Work Project, presented as part of the requirements for the Award of a Master's degree in Finance from the Nova School of Business and Economics.

Private Equity Investment Committee Proposal on Medpace - Valuation

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Abstract

Medpace is one of the world's leading Contract Research Organizations, by revenue, and it differentiates itself by focusing on full-service clinical trials for small and mid-sized biopharma clients. Its strong positioning in a niche market, the high projected industry growth, its strong and stable FCFs, and experienced management team make it an ideal target, which would be further improved by our developed business plan that will enhance its operations, expand internationally, and capitalize on M&A trends. Our proposed transaction is expected to deliver a money multiple of 3.28x and an IRR of 26.84%, representing a strong investment opportunity.

Keywords: Contract Research Organization (CRO); Research & Development (R&D); Mergers & Acquisitions (M&A); Biopharma; Leverage Buyout; Money Multiple (MM); Internal Rate of Return (IRR)

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Valuation

To estimate an **entry multiple**, several methods were used to increase confidence in the valuation.

The first method applied was the **Trading Comparables**, which looks the ratios of similar publicly traded firms and uses them to estimate the worth of another company.

The first thing we did was search for Medpace (MEDP) on Bloomberg, to gain a thorough overview and classification of the company's industry.

While being a **top 10 CRO** in terms of revenues, **Medpace** is still classified as a **mid-tier CRO**, since it doesn't yet have the size of the biggest players in the market.

Although the **bigger players** on the CRO market mostly cater to **big-pharma** companies as their customer base, they have been **increasingly aware** of the **faster-growing small/mid-biopharma** segment, meaning **they also compete directly with Medpace.**

Following our gathering of a **relevant comparable group**, we met with Medpace's Investor Relations Director, to confirm our choice.

The **list of companies** chosen was the following:

- IQVIA, which provides clinical, commercial, consulting, and capital solutions to biopharmaceutical industry. The company's clinical development services cover trial on Phase I/IIa, Phase II/III and Late Phase.
- LabCorp, which is the world's leading health care diagnostics company, and it provides diagnostics and drug development. Drug development focuses on clinical research, and it provides services throughout the clinical research process from early-stage research to post-regulatory approval.
- Icon Plc, which provides outsourced clinical research and laboratory research services to the pharmaceutical, biotechnology, and medical device industries. It

provides support to all stages of the clinical development process from compound selection to Phase I to IV clinical studies.

- Syneos Health, which operates through two segments, clinical solutions, and commercial solutions, offering various clinical development services from Phase I to Phase IV, including full-service global studies, as well as unbundled service offerings.
- Charles River, which provides research models and associated services, and outsourced preclinical services to accelerate the drug discovery and development process.

Afterwards, we gather their **financial information**, looking for metrics such as **EBITDA** and **Enterprise Value**. Within this method, we have broken down the valuation into two parts.

Firstly, we decided to calculate the **EV/EBITDA multiple of the last 10 years** to get an historical overview of the companies' behavior, taking the **average** of each companies' EV/EBITDA multiple from the last 10-years.

The range of multiples we got was from 12.2x – 16.9x, and **the median multiple** was used as the best proxy, given the **differences** in the **relative size of the comparable** firms, leading to an **EV/EBITDA median multiple of 15.1x (Appendix 1)**.

Secondly, we computed the **EV/EBITDA multiple of the Last Twelve Months (LTM),** also taking the average of each company. The range we got went from 8.2x - 16.4x, resulting in an **EV/EBITDA median multiple of 14.9x.**

The second method applied was the **Precedent Transactions**.

This valuation method uses **historical M&A deals** to estimate the value of a current, comparable business. This approach, often known as "precedents," is frequently created by analysts working in investment banking, private equity, and corporate development when attempting to evaluate a whole organization as part of a merger or acquisition.

The **first step** we took in this procedure, was to **look for similar transactions** that have taken place in the **last 10 years**, and within the **same sector**.

We used the Bloomberg platform and searched for *"US M&A transactions in sector "medical labs & testing services"*, which is what we found most significant.

We filtered the transactions by carefully analyzing the business descriptions of the target companies on the list and deleting those that were not a close enough fit.

The **list of companies** we found most suitable to use, is as follows:

- PPD Inc, a global CRO, providing drug discovery, clinical development, lifecycle management, and laboratory services. PPD serves pharmaceutical, biotechnology, medical device, and government organizations worldwide.
- PRA Health Sciences Inc, a global CRO, providing outsourced clinical development services to the biotechnology and pharmaceutical industries.
- Labcorp Drug Development Inc, which Operates as a contract research and drug development company. The Company offers non-clinical and pre-clinical, laboratory testing, toxicology, and laboratory services to pharmaceutical and biotechnology industries.
- Syneos Health US Inc, which leads with a product development mindset, strategically blending clinical development, medical affairs and commercial capabilities to address modern market realities.

- UDG Healthcare PLC, a provider of outsourced commercial solutions to healthcare companies. The company offers supply chain, packaging, sales and marketing, medical and regulatory services for healthcare manufacturers and pharmaceutical retailers.
- Inveresk Research Group Inc, a provider of drug development services to pharmaceutical and biotechnology industries. The company's services include pre-clinical safety, clinical business segments and pharmacology evaluation services.
- Bio-Reference Laboratories Inc, which offers scientific expertise and laboratory innovation in oncology, urology, and women's health, with a focus on streamlining services to create a unique healthcare experience.
- Synlab Holding France AS, an international medical diagnostics provider with laboratory services for human and veterinary medicine as well as environmental analysis.
- Diagnosticos da America SA, a Brazil-based clinical diagnostics company. It also operates a food testing unit, advertising, publishing, human resources services, and research entities.
- LabOne LLC, which offers risk appraisal testing for insurers and drug testing for employers, as well as healthcare-related testing for benefit providers, physicians, and managed care organizations.
- Unilab Corp, which offers a range of clinical laboratory and diagnostic testing services.
- Molecular Devices Corp, one of the world's leading providers of high-performance life science technology.
- BioReliance Corp, which offers biologics safety testing, biomanufacturing, toxicology, clinical trials, animal health, and related consulting services to

pharmaceutical, diagnostic, cosmetic, government, academic, and manufacturing industries.

Afterwards, we took the **median TV/EBITDA** of the sorted list, and we excluded some outliers that had multiples much lower/higher than the average, and got a median multiple range from 11.8x – 21.5x, resulting in a **median EV/EBITDA multiple of 15.8x**.

After considering these **two evaluation methods** (Trading Comparables and Precedent Transactions), which provide a **closer estimation given Medpace's context**, two types of Discounted Cash Flow Methods were conducted, to **capture market/firm specific information**.

Within the **DCF Methods**, the terminal value should be based on **projections** about the **perpetual cash flows** accruing to the investment holder **based on assumptions**, considering any relevant facts and circumstances.

In some circumstances, such as a Gordon Growth Model, this may be achieved by a **steady state growth rate** that is comparable to long-term inflation. In some circumstances, it may be more acceptable to estimate the terminal value using an **exit multiple**, which specifies the predicted value upon exit at a future stage.

The first DCF method we computed was the **Discounted Cash Flow Exit Multiple Method** (EMM).

One way to determine the terminal value in a discounted cash flow calculation to value a company is to utilize an **exit multiple**. This approach assumes that, using the current public market valuations of comparable firms, it is possible to estimate a company's worth at the end of a projected time.

The **projection period** and **terminal value** are the two main parts of the discounted cash

flow approach.

When determining a company's or asset's worth over the course of three to five years, the forecast period is employed. Using the forecast period to estimate a company's worth for a period longer than five years may raise questions about the accuracy of the valuation generated. This doubt is addressed by using terminal value to determine an asset's or company's value.

In the base scenario, the **Terminal Value** is determined using the **average median of the 10-year EV/EBITDA multiple**, which is **15.8x**, and has been previously calculated.

More specifically, in the **base scenario**, to calculate the Terminal Value, we **multiply the average median** of the **10-year EV/EBITDA multiple** by the **2029 Forecasted EBITDA**, and then **divide** this value by **(1 + WACC)^7**, where 7 corresponds to the number of projected periods.

$$Terminal\ Value = \frac{2029\ Forecasted\ EBITDA\ \times \frac{EV}{EBITDA}\ base\ scenario\ multiple}{(1 + WACC)^7}$$

The **final Enterprise Value** corresponds to the sum of the Present Value of Cash Flows and the Terminal Value, and the **multiple was obtained** by dividing the **final EV by the 2022 EBITDA.**

In this specific case, we assumed the Weighted Average Cost of Capital (WACC) to be equal to the cost of equity (**r_e = WACC = 12.59%**), as Medpace records **no net-debt** in the last three years.

The **cost of equity** was computed using the following formula:

$$risk - free\ rate + \beta\ \times\ Market\ Risk\ Premium$$

Where, $Market\ Risk\ Premium\ (MRP) = 8.37\%$

A tax rate of 9.9% was assumed, which was taken from the company's annual report, and a risk-free rate of 3.88%, which corresponds to the current 10-year U.S. Treasuries.

In the pessimistic and optimistic scenarios, we added and subtracted the value of 1 to the **average median of the 10-year EV/EBITDA multiple**, 15.8x, respectively, and followed the same approach.

This resulted in a range of EV/EBITDA multiples between 27.1x – 29.6x, leading to a **Median EV/EBITDA of 28.3x.**

Finally, we computed the **DCF Gordon Growth Method**, which assumes that a business's shares are worth the total of all its future dividends discounted down to their present value (PV) to determine the intrinsic value of the firm.

The single-stage Gordon Growth Model, which is said to be the simplest variant of the dividend discount model (DDM), assumes that a company's dividends would always increase at a constant rate.

The single-stage model only requires a small number of assumptions; however, this characteristic tends to **limit the model's accuracy** when used to **high-growth businesses** with **fluctuating capital structures**, dividend distribution policies, etc. Instead, mature businesses with a history of dividend payments and profitability are most suited for the Gordon Growth Model.

The approach followed was broadly the same as the DCF Exit Multiple Method, with a few differences:

- The Terminal Value Formula used.
- Growth rates to calculate the Terminal Value.

The formula used to compute the **Terminal Value** was the following:

$$\frac{[Free\ Cash\ Flow\ to\ the\ Firm - \Delta\ NWC\ \times\ (1+g)]}{\frac{(WACC-g)}{(1+WACC)^7}}$$

We decided to remove any changes in Net Working Capital, considering that in a perpetuity there are no accounts payable or receivable.

The steady state growth rates (g) used were:

- Pessimistic Scenario: 1%
- Base Scenario: 1.5%
- Optimistic Scenario: 2%

Then, the final **Enterprise Value** was computed by summing the Terminal Value with the Present Value of Cash Flows, resulting in a range of EV/EBITDA Multiples going from 17.2x – 18.1x, with a **median EV/EBITDA Multiple of 17.7x**.

As **Medpace** is a **fast-growing company**, the Discounted Cash Flow method is not the most accurate method of valuation, which explains why only 25% of weight was given to this method, and the 75% left was attributed to the Trading Comparables and Precedent Transactions methods.

Among the five EV/EBITDA multiples, they are all around the same value, apart from the one computed using the DCF Exit Multiple Method, which resulted in a median multiple of 28.3x. As we considered this multiple an **outlier**, we gave it a weight of only 5% in the valuation of the entry multiple.

The methodology used yields a **multiple of 16.40x**, and if we look at the acquisitions of LabCorp and Parexel International, **Medpace's direct peers**, which traded at a

EV/EBITDA of 15.8x and 14.6x, respectively, it gives us some **comfort** that this multiple makes sense.

The entry multiple was estimated as follows:

$$(5\% \times \text{DCF EMM Multiple}) + (20\% \times \text{DCF GGM Multiple}) + \left(25\% \times \frac{\text{EV}}{\text{EBITDA}}\ \text{Precedent Transactions Multiple}\right) + \left(25\% \times \frac{\text{EV}}{\text{EBITDA}}\ 10-\text{year Trading Comparables Multiple}\right) + \left(25\% \times \frac{\text{EV}}{\text{EBITDA}}\ \text{LTM Trading Comparables Multiple}\right)$$

As of 2022, the Health & Pharmaceuticals industry has an **average Enterprise Value to EBITDA** (EV/EBITDA) multiple of about **17.4x** worldwide (Appendix 2), which helps justify why Medpace's entry multiple is quite high.

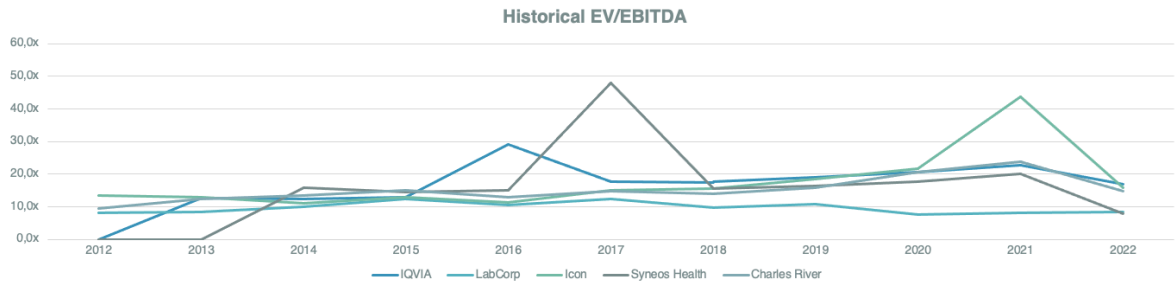
With an average value multiple of 29.04x as of January 2022, healthcare information and technology companies had the highest average valuation multiples, much higher than the multiple of 19.9x in 2019.

In terms of M&A/consolidation activity and valuations it's expected an increase in supply of quality acquisition opportunities coming to market, in large part because of the robust valuation multiples across the Pharma services sub sectors and pending tax legislation that could affect realized gain for a seller. Buyers will continue to see increased competition and multiples to win quality assets in sell side auctions as the investing world becomes more comfortable with these heightened multiples.

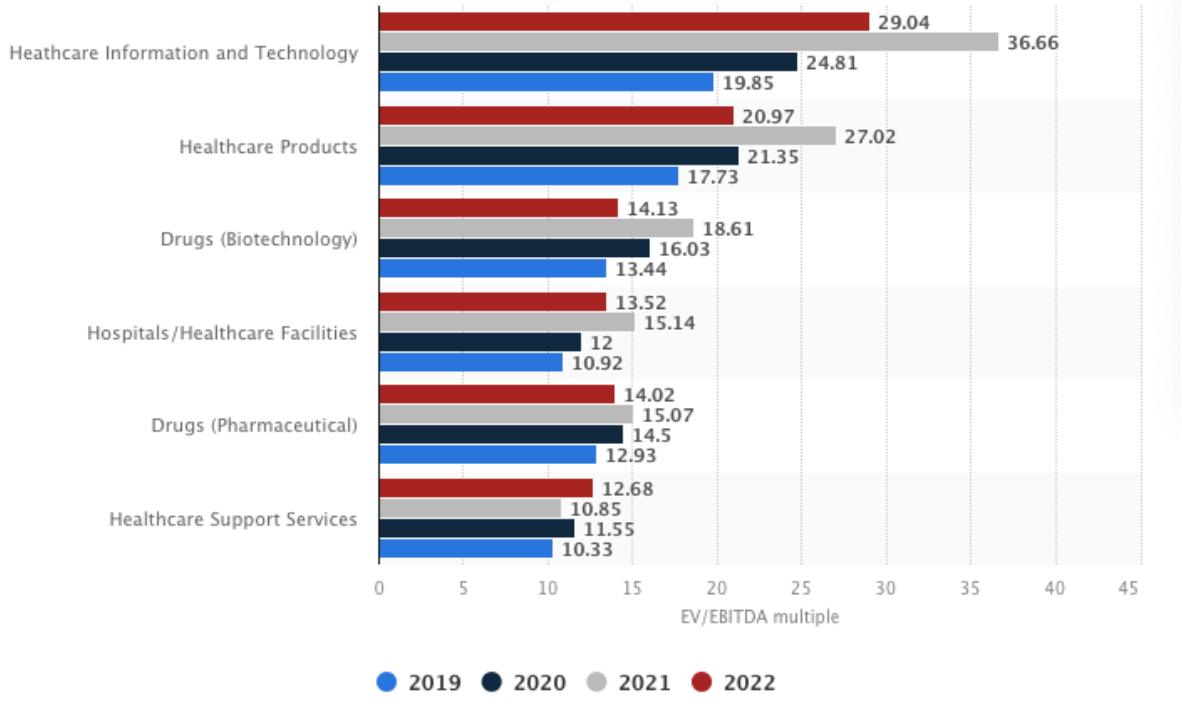
The M&A transaction comps sets show that despite the pandemic, CROs continue to trade at healthy multiples, re-approaching their all-time highs or are at or above historical averages.

Appendix

Appendix 1 – Historical EV/EBITDA



Appendix 2 - Average EV/EBITDA multiples in the health & pharmaceuticals sector worldwide from 2019 to 2022, by industry



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