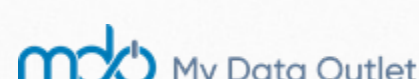


# How can MDO save you Time and Money?

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While quantifying the value add will depend on each specific use case, this post will discuss the advantages MDO can provide over building a similar “In-House” solution. We will discuss 2 major questions:

1. How can MDO save you time?
2. How can MDO save you money?

## Key Points:

- MDO has **no up-front cost** and is offered as an annual subscription
- MDO is about the **same cost as hiring 1 senior data engineer** full time to work on developing and maintaining a similar product
- MDO is **ready to be installed** and users can be up and running very quickly
- MDO provides **expert-level support**

## / What is MDO?

The MDO platform gives you access to financial data, through a front end platform that leverages open source software (R). MDO is a data extraction layer that enables access to databases like QA Direct from Refinitiv. Our founders have each worked on building solutions in the quant workspace for 15 years, and we focus all of our attention on the MDO platform.

Twenty years ago commercial software products were widely adopted, enabling firms to do more powerful quantitative equity research. Since then, technology has advanced, data has become more widely available, and client demands have only grown, but the commercial software products have not kept pace. Many firms are addressing this gap by building their own customized in-house solution from scratch. MDO's platform can shrink this gap, optimizing the user-experience and allowing quants to work more efficiently.

## / What does it take to build an in-house solution?

Before creating the MDO platform, we developed custom in-house solutions for some of the largest Asset Management firms. The project doesn't end when the solution is built, it really just begins as the solution will need to be maintained and enhanced. We view these projects in three phases – planning, building and maintaining.

### // Planning

Assuming there are no delays in obtaining internal buy-in to build the solution and then consensus building among the stakeholders regarding the actual design, creating and scoping the project plan can take 1-2 months.

### // Building

Even with a fully-dedicated development team of two to three employees who are skilled in coding, these projects require additional project management resources and substantial and continuous input from the teams ultimately using the solution. It is not uncommon for the project to require an initial investment of over \$1.5 million and two years dedicated to designing, developing, testing, and converting existing processes.

### // Maintaining

A custom solution requires a team of data engineers and developers to maintain the product. Ongoing maintenance still requires two to three employees with coding skills and knowledge of quant data, and such experts are extremely difficult to find. Firms may be left wondering do these employees have the necessary industry expertise to provide quality enhancements for end-users? However, maintenance isn't the only factor – new content will likely need to be developed. How long will it take to onboard these new content sets into the in-house solution?

## / How does MDO save you time?

### // Shorter learning curve

In MDO, you only need to learn **3 primary functions** in order to get up and running. These common data retrieval methods are used for all of the data items.

### // Smoother transition from research to production

You can use the same data retrieval calls for research and production. You only need to tweak a few function arguments to promote a research factor into production.

### // Less Code

Other data extraction methods require users to write complicated queries OR use many different functions. A single data item call for multiple vendors like Worldscope, I/B/E/S and Datastream in SQL requires 8-10 table joins and 50+ lines of code.

In MDO, you can call **multiple data items** from multiple vendors in **1 line of code**. All adjustments, currency conversions, unit conversions, and date alignment is done on the backend.

As an example, in just 4 lines of code we can retrieve:

1. Index Constituents for last 10 years for DJ STOXX Global 1800
2. Price, Shares, and Security Info on each month end date from one or multiple sources
3. EPS for last 20 quarters on each date from multiple sources (Worldscope, IBES V2, and Reuters Fundamentals)

```
day <- DateRange(startDate = '2010-01-31', endDate = RecentDay(), periodType = 'month')
universe <- ConstituentUniverse("DS_CONST_DJS180E", days = day)

PlugData(universe = universe, items = c("DS_CLOSE", "DS_SHARES", "DS_SEC_NAME", "DS_RE")
FundamentalData(universe, items = c("WS_18193_Q", "IB_ACT_EPS_VALUE_Q", "RKD_SDAI_Q"),
```

*Note: All data items are properly split-adjusted, converted to a common currency, returned in like units, and returned in the requested restated or unrestated format.*

### // MDO maintains the system for you

Regular **enhancements**, performance improvements, and bug fixes are **passed on to the client** via a monthly release cycle.

### // Vendor data nuances are handled on the backend

Users do not need to spend time dealing with nuances of each vendor.

A “short list” of common issues we solve for:

- Securities that change currency throughout time
- Securities that change fiscal periods throughout time
- Some currencies scaled in billions while others scaled in millions for the same vendor
- ‘Parent’ vs. ‘Consolidated’ values – which to use?
- Differentiating between restated and unrestated data
- Differentiating between preliminary and final data
- Returning data in a common currency
- Properly unaccumulating cash flow data
- Converting currency values to a single scale (e.g. all in pounds in UK)
- Adding appropriate start and end dates for historical time series mapping

### // Benefit from many users

- Function calls have been used in research and production by other clients in investment management
- Data issues due to underlying data or retrieval logic can be discovered quickly and corrected

### // Buy vs Build timeline

- Building an in-house system similar to MDO would likely take 3+ data engineers with expert knowledge of the content 1-3 years to build.
- With an annual subscription to MDO, you can be up and running in less than a week.

## / How does MDO save you money?

### Key points:

- Developing an In-House solution for all users can be a **large initial investment**
- Maintaining an in-house system takes a **team of data engineers** and developers with expert knowledge of the content.

### // Advantages of MDO versus an in-house solution

- **No** up-front development cost (\$1 million+)
- **No** on-going development or maintenance (\$400k+ annually)

### // Advantages of MDO versus other commercial platforms

- MDO is **more cost effective** when compared to other commercial products
- MDO is **Easier** to use
- MDO provides greater **flexibility**
- MDO leverages **open source software**
  - No need for expensive, outdated analytic software

### // Overall Comparison

Time		Cost	
<b>MDO</b> <ul style="list-style-type: none"><li>• <b>3-6 Months</b></li><li>• No initial development</li><li>• 1-2 months build factors</li><li>• 2-4 months validation</li></ul>	<b>Build</b> <ul style="list-style-type: none"><li>• <b>1-3 Years</b></li><li>• 1-2 months per content</li><li>• 2-3 months build factors</li><li>• 3-6 months validation</li></ul>	<b>MDO</b> <ul style="list-style-type: none"><li>• <b>No Development Costs</b></li><li>• Annual Software Subscription</li></ul>	<b>Build</b> <ul style="list-style-type: none"><li>• <b>Large Initial Investment</b></li><li>• Ongoing Maintenance Cost</li></ul>

## / In Summary

The **Buy vs. Build** decision is something that we have discussed with many different vendors and clients over the past few years. Many firms have their own research code and analytics which they have developed over many years of tireless work, and they want to continue to build and maintain their own analytics engine. However, in most cases it is not as efficient or cost-effective for the client to build and maintain their own **data retrieval methods**, which is where MDO's solution can not only complement but optimize the existing analytics engine.

MDO can provide the data retrieval methods to help improve workflow and enhance collaboration, allowing clients to focus more resources on researching, building models, and managing investments.