

# Is It Worth It?

An audacious, imperfect, and comprehensive attempt to answer,  
“What are the benefits of investment office modernization projects?”

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“It’s supposed to be automatic,  
but actually, you have to push this button.”  
— John Brunner

“Everybody thinks that when new technologies come along that  
they’re transparent and you can just do your job well on it.  
But technologies always import a whole new set of values with them.  
— Brian Eno

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## Introduction

At Cordatius, we have been running Investment Book of Record (IBOR) re-engineering projects for long-term investors for the last 4 years. These projects often lead to tangible benefits. We know it. Our clients know it.

On the other hand, every month a prospect asks us, “What are the benefits of undertaking an IBOR Modernization project?” This was last asked by a prospect’s Board and Executive Directors’ team. It got us thinking: what a cool paper to write! And so we did.

First, we scoured the web, out of curiosity, for research that would apply to long-term investors, to no avail<sup>1</sup>. This orphan industry is tiny in comparison to, say, the legal field, so we were not surprised that no studies have been published about this topic. This paper is a first attempt to quantify the benefits of such a project; in it, we mainly ask, “What are the benefits of an IBOR re-engineering project?”

Or its pedestrian version, “What are the benefits of an investment office modernization project?”



Figure 1: Source:  
<https://www.plant.ca/features/171541/>

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<sup>1</sup> Worth mentioning is the Backstop Solutions and Mercer report, “Institutional Investor Productivity Survey”, November 2020.



## What are the benefits of investment office modernization projects: A human efficiency perspective

### General Assumptions

It is important to establish some basic assumptions.

- Most investment offices operate off of the accounting data, also known as Accounting Book of Record (i.e., ABOR). We assume that using IBOR instead of ABOR for investment decisions is the right approach.
- We assume this is the investment office of the long-term investor<sup>3</sup>. Further, we assume that this office is a manager-of-managers (with no in-house trading operations).
- We assume our fictitious investment office has \$2Billion in Assets Under Management.
- We assume there is a staff of six (i.e., personas), broken into CIO, Senior, Mid-level, and Junior position on the investment side, and Mid and Junior for the operations side. We assumed no Senior Operations officer nor dedicated COO or CTO.
- Salaries were assumed and shown here, adding to a payroll of approx. \$1.6MM per year
- We assume 2,000 work-hours/year.
- We also assumed that the total of the staff's time is occupied by one or more of these types of activities<sup>4</sup>:
  - Reading — Reports, research, proposals
  - Writing — Reports, memos, notes, proposals
  - Creating presentations — Self-explanatory
  - Spending time on data — Searching, cleaning, debating, preparing, presenting
  - Analyzing — Portfolios, investments, markets, opportunities
  - Meeting — Managers, partners, internal staff, service providers
  - Document related work (save and find) — Looking for, saving, tagging, remembering

Position			
Investments	No of employ	Salary	
CIO	1	\$	1,000,000
Sr	1	\$	250,000
Mid	1	\$	125,000
Jr	1	\$	70,000
Ops Officer			
Mid	1	\$	100,000
Jr	1	\$	45,000
TOTAL	6	\$	1,590,000

**Figure 3: Office staff and salary assumptions.**

We then made assumptions about the amount of time that each one of the personas spends on those tasks. For example, we assumed that the CIO spends 40% of his time reading/reviewing (i.e., starting in the second column, second row), 15% writing, etc. The assumptions for the staff are shown below, broken down by role and function<sup>5</sup>.

<sup>3</sup> We have previously defined long-term investors in "I say tuh-mey-toh, You say tuh-mah-toh. Are You Trying To Confuse Me?"

<sup>4</sup> The superhuman team members are extremely efficient and spend zero hours a week around the water cooler.

Activity	Inv Officer					Ops Officer				Avg across firm
	CIO	Sr	Mid	Jr	average for div	Sr	Mid	Jr	average for div	
Reading	40%	30%	20%	10%	25%	20%	10%	0%	10%	19%
Writing	15%	20%	20%	20%	19%	20%	10%	0%	10%	15%
PPT work	2%	10%	15%	19%	12%	20%	10%	5%	12%	12%
Data ops	0%	0%	5%	10%	4%	5%	10%	40%	18%	10%
Analysis	3%	5%	10%	10%	7%	20%	25%	15%	20%	13%
Meeting	25%	15%	5%	1%	12%	5%	5%	0%	3%	8%
File/doc saving and finding	15%	20%	25%	30%	23%	10%	30%	40%	27%	24%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

**Figure 4: What percent of their time is the staff spending on each type of task?**

Interestingly, a review of recent productivity measures produced by Backstop Solutions Group and Mercer<sup>6</sup> categorizes tasks into Core, Value-add, and Non-value-add. In their research, they found that 30% of the investment team time is spent on file loading or file finding. Our assumption concurs with their research and averaged 24% across all divisions and functions.

## Scenario Assumptions

For the next step, we broke down improvements that need to be considered quantitative (e.g., a portfolio management system), and qualitative (e.g., document management technology). Various scenarios, which we have encountered in our projects, were then formulated.

The scenarios include typical cases we encounter in our projects:

- Quantitative system scenarios:
  - Single Source of Truth data warehouse
  - One core analytics
  - Streamlined data processes
- Qualitative system scenarios
  - Loading documents
  - Finding files
  - Selection Processes/Research Management

## Time-savings Assumptions

The next step involved estimating the gains (e.g., time savings) achieved by each persona, each function, and for each scenario. For example, using a "Single Source of Truth data warehouse" scenario can provide the following task-specific savings for each persona:

- CIO → leads to 0% saving of time since they have no involvement in data ops.
- Senior and Mid-level investment person → also leads to 0% saving of time.
- Junior level Investment person → saves 25% in time since this team member is most likely to extract data for their own or their bosses' consumption.
- Mid-level Operations person → benefits from 35% saving of time
- Junior level Operations person → benefits from 45% saving of time

<sup>5</sup> We have included our assumptions of the Senior Ops person, even though the team does not include one.

<sup>6</sup> Backstop and Mercer, "2020 Institutional Investor Productivity Study: Investment Professionals Weigh In". Available from clients or in my private library.

For clarity, this means that the Junior level Operations person, for example, extracts data 45% more efficiently than without having a single data warehouse<sup>7</sup>. We performed this exercise for the six scenarios, across a team of six, for every activity they engage in. All the benefits of scenarios to all the personas in the fictitious investment office are not displayed but are available upon request<sup>8</sup>.

## The Results

The results of overall savings were rolled up by type of knowledge considered, across all team members and activities. The sum of all percentage improvements was converted into Dollars based on the assumed salaries, summed up, and displayed in percentage terms for quantitative and qualitative scenarios.

The table shows the summarized results<sup>9</sup>:

What we found:

- The total amount of savings for the firm could be 14% of the annual payroll. In our case, this contributed +\$200,000 in time efficiencies a year.
- The lion's share (11%) is due to qualitative technologies, a somewhat surprising result, according to our initial reviewers. This can be explained by the fact that most investment offices have working quantitative processes but subpar qualitative ones. The Backstop Mercer research confirms that 94% of the surveyed thought, during the 30 days before the survey, "there must be a better way...". The most frequent activities that lead to the "better way" thought appear to be qualitative.
- Quantitative technologies lead to only 3% per annum savings, in our middle-of-range assumptions. This may be related to the model we created. There are other benefits (i.e., not quantified) listed under the "Technological Savings" and "Other Benefits" sections below.
- Viewed another way, in a 2000-hour work year, this translates into 284 total man-hours of savings, EVERY year. The improvements are much more impactful for more Junior staff. However, everyone benefits from them across the board. In the case of the CIO, that frees up 8-10% of their time. That is 2 whole days, every month.
- Only one persona seems to be in jeopardy due to this exercise: that of a junior operational person (i.e., a 107% gain in efficiency). That is mainly due to a massive reduction in manual tasks. It is worthwhile mentioning that in our projects, the junior operational staff was always upgraded/moved to a higher-order activity, such as document ingestion monitoring or quality control type of activities.

	Savings			
	Quant	Qual	Total (\$)	Total (%)
CIO	\$ 1,000	\$ 83,500	\$ 84,500	8%
Inv Officer				
	Sr \$ 1,250	\$ 20,000	\$ 21,250	9%
	Mid \$ 938	\$ 9,375	\$ 10,313	8%
	Jr \$ 3,080	\$ 4,865	\$ 7,945	11%
Operations				
	Sr			
	Mid \$ 20,250	\$ 33,250	\$ 53,500	54%
	Jr \$ 21,150	\$ 26,888	\$ 48,038	107%
Avg across firm	\$ 47,668	\$ 177,878	\$ 225,545	0%
Avg across firm		3%	11%	14%

**Figure 5: Quantitative benefits of a modernization project.**

<sup>7</sup> These estimates are based on our observations and gut feeling and can be contested.

<sup>8</sup> Please send an inquiry to ken@cordatusllc.com

<sup>9</sup> These are indicative results. We spent a fair amount of time playing with our models, but the results stayed in the same magnitude no matter what assumptions we made.

## What are the benefits of investment office modernization projects: A technology cost-savings perspective

We also assumed that the investment office incurs the following service providers' costs. These "BEFORE" costs include the ones incurred by a typical investment office and encompass custodian, consultants, and other technologies.

Using our experience as the benchmark, we created the "AFTER" costs. They are shown in the third column of the table.

In this example, we assumed the client implements a quantitative system (i.e., "one tech for all assets"), a document management system, and a workflow/research management system.

We also assumed a composite price across all the systems we are familiar with<sup>10</sup>.

The following savings can typically be expected<sup>11</sup>.

- In our example, this leads to a 4% cost increase.
- The new expenditure is estimated at \$236,000.
- Savings are achieved from the redistribution of services, like the removal of some services offered by the custodian, since they are now assumed by the new vendors.
- The counterintuitive result is caused by the fact that savings are generated by combining multiple systems into one.
- We assumed there was no service cut back from consultants<sup>12</sup>.
- What is remarkable is that the office modernization exercise is essentially cost-neutral, akin to someone replacing your old car with a brand new one, at no additional cost to you.

Technology:	BEFORE	AFTER
Custody	\$ 300,000	\$ 250,000
Main consultant	\$ 400,000	\$ 400,000
Absolute return consultant	\$ 100,000	\$ 100,000
Private Asset Consultant	\$ 300,000	\$ 300,000
Portable Alpha manager	\$ -	\$ -
PE Technology	\$ 65,000	\$ -
Abs Return Technology	\$ 65,000	\$ -
Bloomberg	\$ 100,000	\$ 100,000
Board Package distrib tech	\$ 15,000	\$ 15,000
One tech for all assets	\$ -	\$ 150,000
Document Management	\$ -	\$ 36,000
Research Management	\$ -	\$ 50,000
<b>Total</b>	<b>\$ 1,345,000</b>	<b>\$ 1,401,000</b>

4%

**Figure 6: Technology cost before and after.**

## What are the benefits of investment office modernization projects: A hard-to-measure perspective

We started this piece by examining qualitative estimates of benefits from the IBOR re-engineering process. Interestingly, we close this paper by looking at other intangible benefits. Many benefits cannot be quantified:

- Currently, most investment offices use ABOR data to make portfolio/investment decisions. Typically, accounting data is available 7-12 business days after month-end. With the IBOR re-engineering project, your data is up to date all the time. What is the benefit of not being in the dark for 2-3 weeks, and having up-to-date data (i.e., think March-April 2020 at the onset of COVID outbreak)?

<sup>10</sup> On a case by case basis, the number may differ for your investment office.

<sup>11</sup> This does not include Cordatius fees. Cordatius fees are a one-time fee. The tabulated savings are annual.

<sup>12</sup> Even though we have observed some cut-backs in the 50-100k range per annum.

- If the investment office has signed on to a risk provider,
  - the data is available immediately to be loaded by the vendor (i.e. savings of 3-5 more business days)
  - or the risk analytics from the selected technology can be used immediately
- Having information available at their fingertips, enables investment staff to quickly evaluate opportunities, and identify an “unattractive” deal. This leaves more time for them to focus on “attractive” deals.
- What is the value to the CIO of having up-to-date information at their fingertips, on the iPad, on the run, in an airport?
- Most investment teams report to a Board. What is the value of providing good and timely information to them? What is the value of the trust you build?
- In some examples, the “after” manager selection process reduced the time to allocate by 40% (i.e., in number of days). What is the value of processing more managers per year?
- Similarly, the freed-up time estimated under the quantitative perspective can be put to more productive activities.
- All documents, not just the ones that are manually loaded, are available very quickly. What is the value of finding a document urgently (especially for your boss)?
- In most implementation exercises, historical errors are found in the calculation for the ABOR. Unfortunately, these cannot be re-instated. What is the value of knowing there are no accidental/missed fees going forward?
- With robust document management, missed capital calls are a thing of the past. What is the value of not missing capital calls?

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## Thoughts, Observations and Conclusions

- Is it worth it? Yes.
- How much is it worth? Efficiencies for an investment office with a \$1.6MM payroll and a \$1.3MM annual service provider budget can:
  - Range from 3-8% savings in staff time (in Dollar Terms) for quantitative projects, mostly benefiting the operational staff.
  - Range from 15-30% savings in staff time (in Dollar Terms) for qualitative projects, benefiting the entire staff.
  - Range from 0-10% net additional cost to the service provider budget.
- The assumed investment office is what we felt was representative; not too small and not too large<sup>13</sup>.
- The AUM is only used in relation to the number of staff and to convert various measures to percent/bps.
- As one of our smarter reviewers pointed out, we have factorized the investment office activities into 7 factors: Reading, Writing, Creating presentations, Spending time on data, Analyzing, Meeting, and Document related work. This model is linear (i.e., non-stochastic and not based on simulations).

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<sup>13</sup> An accompanying spreadsheet enables us to add additional processes and try various assumptions.

- The most objections will probably come from the assumptions we made for each personas' time spent on these 7 types of tasks, and then on the value of the efficiencies various projects bring to each one.
- We have spent a fair bit of time on the model and generally, found out:
  - The efficiency gains are more pronounced for the junior people and less so for senior staff.
  - Quantitative project efficiency gains were always in the single digit percentage.
  - Qualitative project efficiency gains varied between low to mid double digits percentages.
  - Qualitative benefits were always 5-10x larger than quantitative ones.
  - The gains from the junior operational position that were greater than 100% indicate a loss of a job. We note that many organizations dedicate an FTE to repetitive tasks (e.g. downloading files from websites, and tagging and saving them). In our experience, as the investment offices are always understaffed, a released FTE is welcome and leads to the upgrading of the FTE's function.
- The surprising finding is that upgrading one's investment office technology involves only a slight additional cost. This cost neutrality can be attributed to several factors:
  - The additional cost is offset by the cost savings based on the removal of duplicative or inefficient processes/technologies.
  - Some services are stripped away from the custodian.
  - Among the custodians, we have found the largest dispersion of pricing, even within clients of similar size.
- The overall savings that can be quantified add up to hundreds of thousands of dollars a year, as the upgrade exercise delivers savings for an estimated 5-10 years.
- The dialogue held with those that opined on this paper trivialized the fact that everyone is aware that these projects deliver benefits, both quantifiable and unquantifiable. This report takes a step closer to providing the evidence.
- Most investment offices are aware of the need to modernize. They often try the "internal" route by assigning an internal staff to analyze and synthesize a solution. They all seem to be in year 3 of a 6-year program for modernization. One wonders if anyone ever gets past year 5 (many inconclusive efforts).
- Probably the biggest assumption we have made is that the investment office identifies the problem, makes the right vendor selection, and implements it within a reasonable time frame. And that it is being universally used by staff, so they can reap and measure the benefits. In reality, many implementations are inconclusive and endless.
- Beyond hard or soft numbers, investment offices spend billions of dollars a year on alpha. Arguably, the operational alpha that is being harnessed with the described projects is the cheapest and fastest alpha to be obtained.

As we mentioned in the introduction, this paper is a first of its kind — a trailblazing labor of love and we hope it provided some insight and answers to your questions, the biggest being, "Is it worth it?" Yes, we emphatically think it is.

Cordatius is a management consulting firm dedicated to Long-Term Investors. Since 2016, Cordatius has served the investment offices across their technology, operations, and policies issues. We focus on your data so you can focus on your alpha. You can reach us at [ken@cordatiusllc.com](mailto:ken@cordatiusllc.com).