Sourcing Alpha Within Investment Operations

In this Nov 2008 research note, Chito Jovellanos (*forward look, inc.*) provides an updated management overview of their research results that explicitly link portfolio performance to the quality of a firm's investment operations.

As most everyone knows, alpha stems from a manager's skill, which is expressed through a target portfolio representing their view of assets that will outperform a benchmark. This ideal portfolio however needs to be translated into reality, and reality is fraught with implementation issues -- eg, can't short that stock? has the execution price moved away from the model's parameters? couldn't the trader exit the position in time? did they 'fat-finger' the option symbol?

Intuitively, the quality of the investment operation (spanning services from trading to settlements) at the manager's firm either enables the desired outcome or significantly dilutes the potential of their strategy. So exactly how much can operational efficiency contribute to realized investment performance?

In seeking to answer this question, *forward look, inc.* revisited data from its client engagements spanning Q4 1999 to Q2 2006. As with most client projects, the mandates were expressed in tactical terms (eg, "we want to streamline our emerging markets operation"), but surprisingly yielded (in hindsight) strategic benefit in terms of improvement to the underlying portfolio's performance.

In brief, the firms in our study ranged from $5-100+B AUM, with individual funds typically running between $250M - $1.1B of managed money. Asset classes included equities [~65%], fixed income [~15%], and listed derivatives. Geographies covered were global (developed [~80%], emerging), and all sectors were represented, including alternatives. Strategies included long-only, long|short, and equitization.

Methodology

We selected those projects where only one very specific process was modified (eg, voluntary corporate actions management) or only one highly focused technology was implemented or retooled (eg, optimizing cancels for algorithmic trading). Just as importantly, all other elements surrounding these funds' operations had to have remained constant. This approach provided a form of *a posteriori* control where we were examining only the effects from one imputed variable. The data screen resulted in 52 fund samples (from a population of 138 investment portfolios across 19 asset managers) where all known factors (eg, style, exposure, concentration, manager[s], etc.) were constant throughout the observation period, *except the*

one operational change that was introduced by the project. Performance attribution data was provided by our clients (calculated using a mix of holdings and transactions based techniques at weekly or monthly intervals).

Our minimum sampling period was three contiguous calendar months, with the bulk of our data collection spanning a six to nine month window.

Results

The key observation was a 50-250 basis point improvement in risk-adjusted performance (annualized, gross of fees) for the underlying portfolios that were affected by our client's initiatives. As noted in the preceding section, we filtered on data that showed performance attribution to be constant, but with returns and measures improving. Effects were visible generally within 6-9 months of project initiation. Highlights of our results follow.

Figure 1 provides an overview of all the 52 sampled funds and the measurable improvements in their performance. The 'average' is represented by a cluster center indicating a 119 basis point improvement within 7 months of the project's initiation. Note that these funds were tracked across extremes of market cycles - both bear (2000-2002) and bull (1999-2000; 2003-2006), and performance improvements were measured relative to the benchmark - not absolute return.

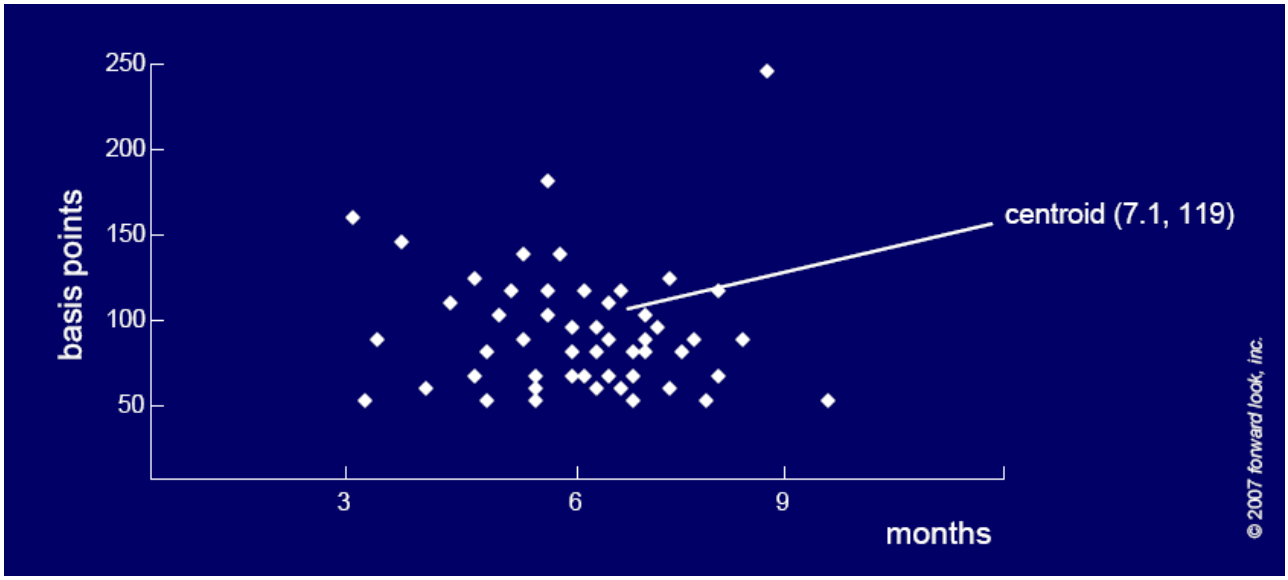

FIGURE 1

Figure 2 categorizes the various projects into functional initiatives and, for each category, highlights the project where the maximal performance gain was observed.

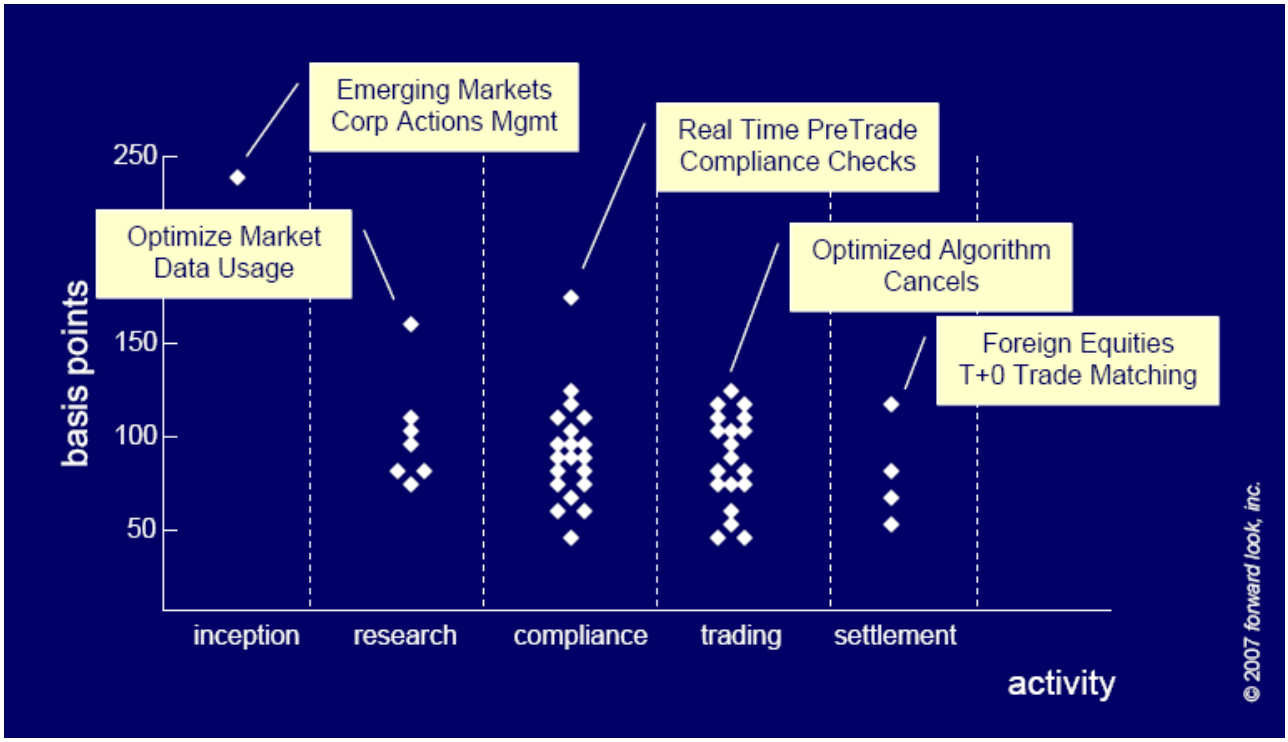

FIGURE 2.

We also sampled other funds (8 in total) outside of the set of 52 that made up the immediate study. In these cases, two operational updates were being applied concurrently (eg, "implement broker matching via Omgeo" *in addition to* "automate trade date reconciliation with prime brokers"). Our provisional analysis strongly suggests that single optimizations dominate, ie the familiar '80/20' rule. Optimizations are not additive, most likely due to correlated effects.

Discussion

What was the cause of these observed improvements in performance? Our intuition suggested that weak information flows within a firm are the precursors to implementation shortfalls. More formal factor analysis we conducted also indicated that these shortfalls in the portfolio implementation framework stem from 'Information Latency' ie, the inability of people and systems to deliver and act on data in a timely manner. For example, the effectiveness of the shorting strategy is dependent on the lending data consolidated into the manager's models or trade lists; execution quality is compromised if the traders cannot adjust their approach when the fills from EMS's roll up erratically into their OMS blotters; income is incorrectly reported because of misclassified entries when booking foreign tax reclaims from custodian's notices.

Interestingly, many of the performance attributions we examined did not sum to unity. We believe that these unexplained residuals are attributable to Information Latency, rather than

'idiosyncratic factors', as typically noted today. See Figure 3 below for a conceptual framework of Information Latency. For an overview of the underlying data used in our factor analysis and the usage of the Data Operability Threshold (DOT) metric, please refer to the **Appendix** at the end of this article.

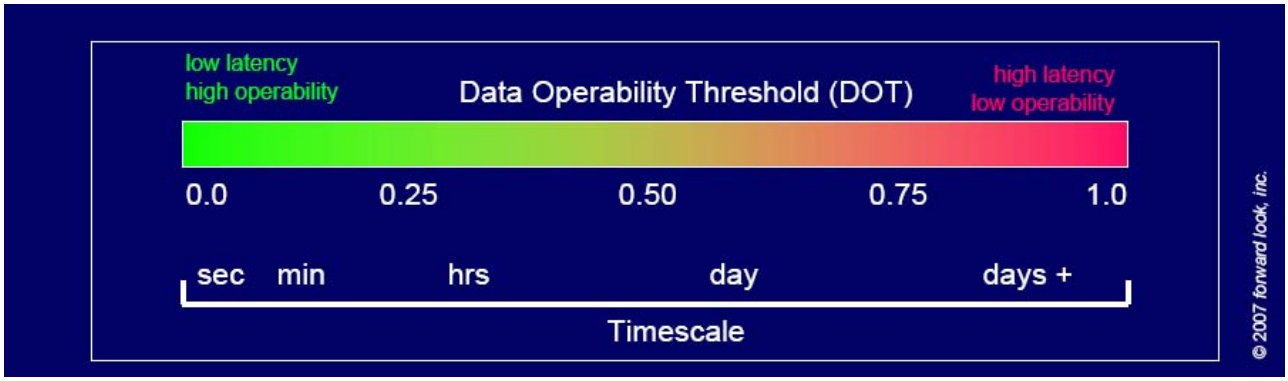

FIGURE 3

We also examined specific cases in order to glean more detailed insights into the impacts of a specific operational initiative. As an example, we show a 'before' and 'after' view (Figure 4 and Figure 5 respectively) of the changes in DOT values observed associated with a market data optimization project for a global asset manager employing a long-short strategy driven by a hybrid fundamental and quantitative approach.

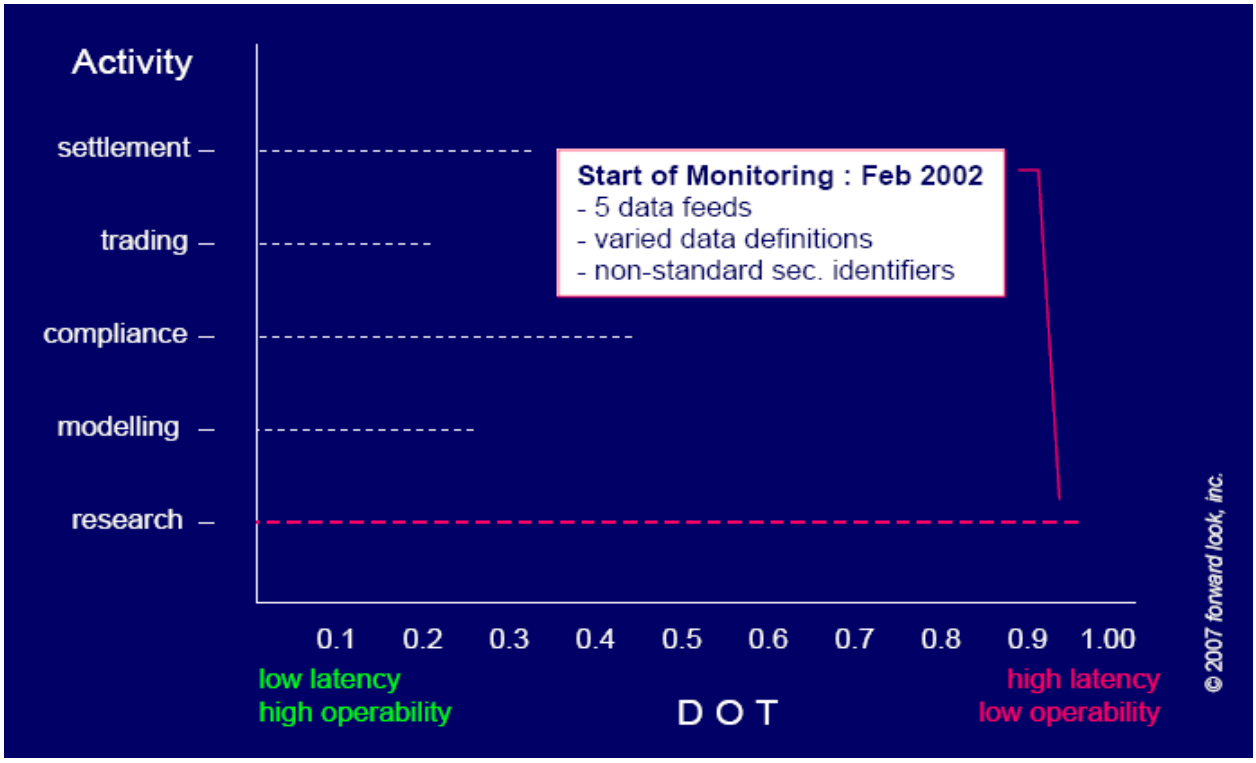

FIGURE 4

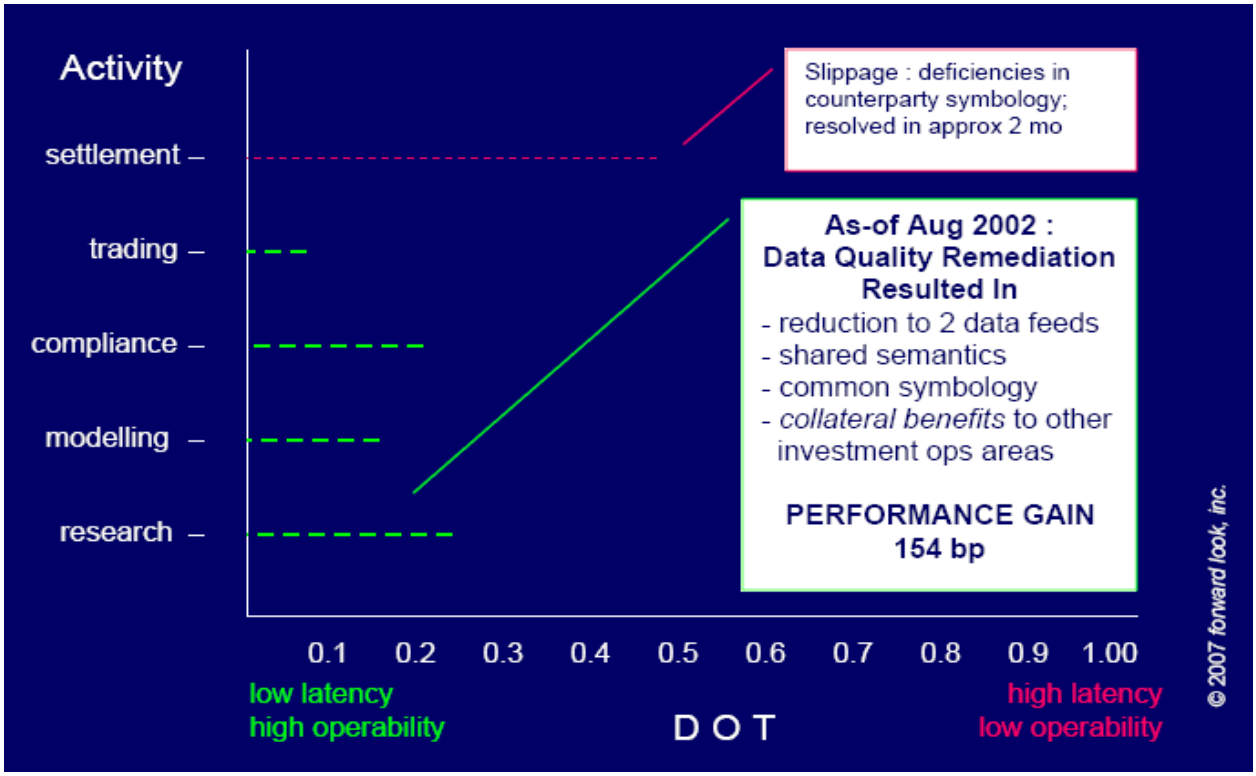

FIGURE 5

When we presented our research results at the Plan Sponsor and Consultant Circle Summit (San Francisco, Oct 2007), the insights clearly resonated with a number of constituencies:

For the institutional investor, they could see using these techniques as a predictive tool to

- improve fiduciary oversight (ie, establish the quality of the manager's operations)
- identify, engage and retain the better managers (ie, based on skill plus operational competencies); and
- maintain on-going due diligence (ie, a methodical process for evaluating their manager's operational soundness).

For the investment manager, they saw it as a prescriptive tool to

- improve strategy and product performance; and
- better capture and retain clients.

At this juncture in the markets, many asset managers are likely looking for alpha in all the wrong places. Industry-wide, firms are exhausting similar strategies (eg, 'short extension') and more than likely diluting each other's returns. As the latest bull quickly recedes, trending markets boosting performance are no longer a serendipitous ally. Conversely, taking on more risk in the hope of achieving better returns heightens the probability of sub-par performance given today's credit-induced volatility. And for dollar-based investors in today's economic climate, holding on to cash is akin to slowly drifting backwards.

So what other options does a manager have to beat their benchmarks? Perhaps looking inward at the quality of their investment operations is a long-overdue alternative. It could potentially yield anywhere from 50-250 basis points in risk-adjusted performance. Moreover, looking deeper into the sources of Information Latency at a firm can help clarify the ROI for remediation choices, and point to the optimal initiative that will address implementation shortfalls.

References

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Appendix

As part of our pro-forma approach to projects and the associated workflow analysis, we profile and monitor key categories of (time-stamped) 'streaming' data, comprised mainly but not exclusively of:

- inputs to model(s) eg, company fundamentals and market data sourced from vendors and exchanges
- outputs from the manager's models and-or optimizers eg, trade lists
- compliance rules, client and regulatory guidelines, and other constraints that were applied to the portfolios
- orders, eg FIX messages
- fills and trades (including amends and cancels)
- settlement records, eg broker confirms, custodian SWIFT messages.

Our in-house tools allow us to interrogate and analyze data in various formats, and establish where the lags and inefficiencies in information flows exist (Information Latency). We then focus our remediation efforts on those areas that are flagged as operational 'soft spots'.

To enable a more quantitative measure of Information Latency, we developed the Data Operability Threshold (DOT) metric. DOT measures the data mediation 'burden' inherent in accurately mapping between transactions or database records (eg, from FIX to SWIFT contexts or vice-versa), and provides a convenient framework for establishing comparables. The larger the DOT value, the higher the Information Latency due to lower data interoperability. DOT can be mathematically described as:

$$DOT :: \text{Syntactic Gap} + \text{Semantic Gap} + \Phi$$

where the Syntactic Gap arises from the underlying message's structure (eg, the use of specific tags such as <Instrmt> in FIXml versus :35B: in ISO15022)

the Semantic Gap stems from the usage of specific data values (eg, an exchange ticker versus the ISIN); and

Φ is a Bayesian component that tracks the temporal shifts in syntactic and semantic gaps within a data stream, and the conditional probability of a state change from STP to non-STP.

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forward look, inc. enables investment managers to grow their revenue streams by improving product performance and minimizing implementation shortfalls associated with complex product development initiatives. For more information, visit our websites at www.forwardlook.com, www.riskforecast.com, or call us at +1 617 956-2239
