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Transforming Trading Operations

Using Analytics to Drive Trading Strategy

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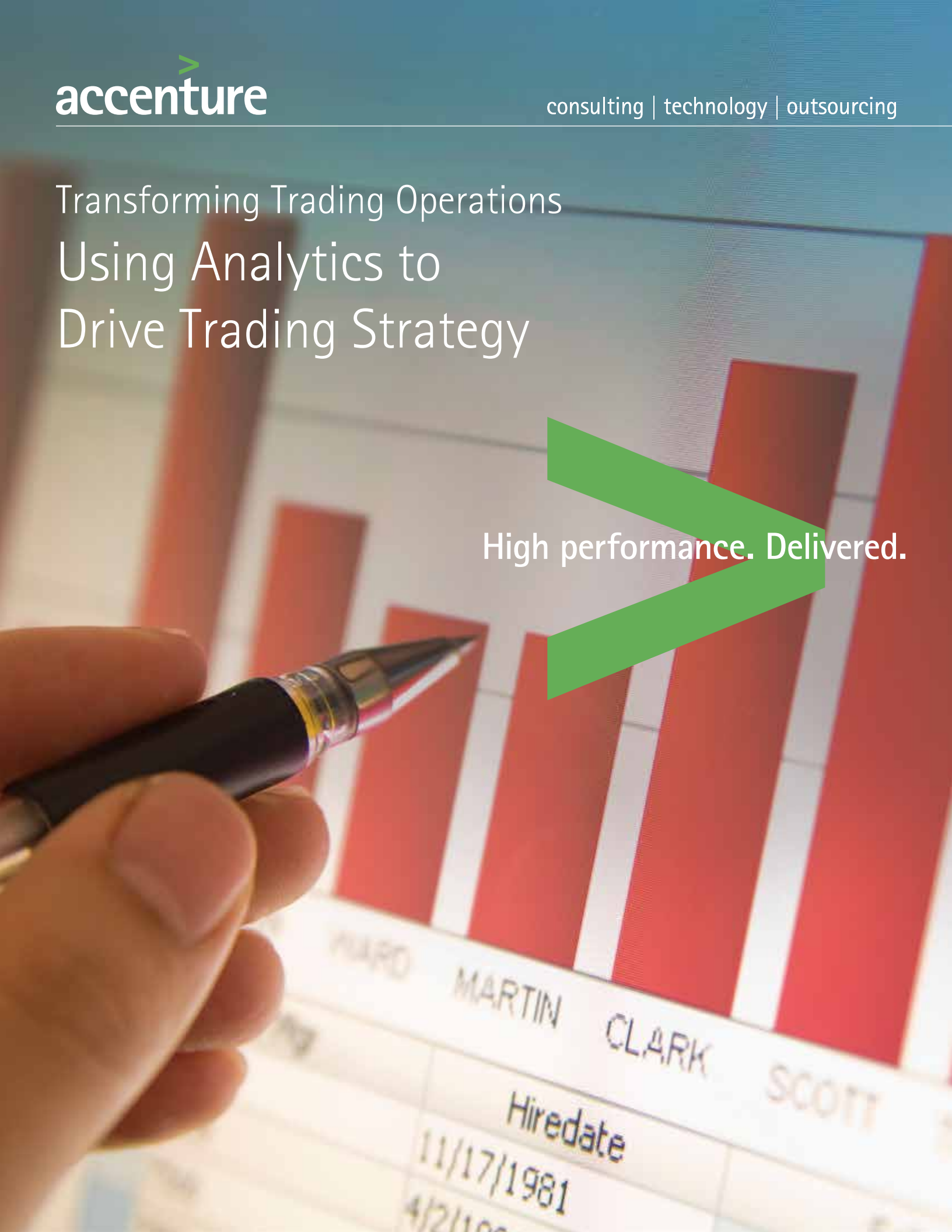

The term 'analytics' seems to be everywhere these days – across every industry and in just about every facet of technology. Commodity trading organizations are no exception, as many of them are looking to identify new revenue streams in today's volatile environment.

As trading organizations look to optimize the value of their assets or speculate on future commodity price movements, they employ many forms of analysis to help drive their trading strategies. However, the excitement over these new ways of driving finite strategy has distracted attention from the crucial importance of asking the right questions.

With the proliferation of analytical tools in the marketplace, there are now more technology options than ever to support decision-making. Where many trading firms neglect to focus, however, is in defining the exact questions they are looking to have analytical tools help answer. It is this lack of planning that may result in companies failing to realize the full benefit of the analytics tools or services they purchase. There are opportunities for management and traders alike to learn a great deal by leveraging these technologies provided they are looking to solve meaningful questions. In this paper, we provide guidelines on answering such questions and provide examples of how these can impact trading strategies.

This is the second of four pieces in Accenture's "Transforming Trading Operations" series, an introduction to how commodity trading operations can respond to today's fiscal and regulatory challenges.

Asking the Right Questions of Stakeholders

Based on our experience in working with clients, many trading firms struggle to gain value from their analytical tools. Most of the time, we find that this is a result of a lack of preparation on the part of the trading organizations rather than any deficiency in tools' capabilities. Organizations must agree on the questions they are looking for the tools to help them answer.

There is no comprehensive list of questions that all trading organizations can use to unlock the value of their analytical tools. However, there are many challenges we see our clients facing that point to a need for understanding their commonalities. Given that many trading organizations are a part of public companies, understanding how trading performance is helping drive shareholder value is paramount to continued success.

Key questions that management might consider to answer include:

- What is the estimated impact of the trading portfolio on earnings per share (EPS)? How effectively have positions hedged forecasted asset output?
- How does the return on equity (ROE) or return on invested capital (ROIC) within the trading business compare with internal targets? How does it compare with peers?
- What level of catastrophic risk exists within the trading portfolio and how may that impact current and future earnings? How much of these risks can be insured using market instruments and how much cannot? How much of these risks are attributable to credit versus price versus operational risk? How are these risks interdependent?

These are just a sample of the questions management can look to answer by using analytics. As trading instruments and markets evolve, valuing and reporting performance becomes increasingly difficult as more information is required to calculate and interpret performance. As a result, making use of advanced analytics becomes an essential step in this process.

Analytics in Action: Driving Cost Reduction

As trading organizations strive to maintain and improve profitability in volatile times, analytics can be used to help pinpoint specific areas where cost reduction opportunities exist. Examples of cost related analytics include commodity transportation costs, inventory fees, tariffs and financing costs. Proper application of analytics encourages cross business ownership of cost management. By utilizing cash forecasting tools and working capital reports, trading organizations can minimize cost of capital. Leveraging a strong understanding of a trading organization's goals and using cost related analytics to determine if spending is commensurate with those goals allows organizations to make the best possible use of their existing resources and drive more efficient value creation. Managers yearn for easy to read, non-accountant level reports which give them a pertinent high level view, allow them to drill down if more is needed, and that do not require days to create.

How the Right Questions Can Drive Strategy

While understanding the impact to financial statements is important, there are many types of questions that, when answered, can help shape more detailed trading strategies. These include questions about how current positions may compare with management financial targets, how potential future positions may impact current risk levels or which strategies drive the most profit for the firm.

Given the distinctive composition of commodity trading firms (some are asset-backed, some trade to only hedge assets, others are more speculative, etc.) these questions may have many unique facets and require highly different inputs for each company. Additionally, as firms' trading strategies differ, so too will the questions a client is seeking to answer.

Some of the key questions that help drive trading strategies for our clients include:

- What current trading strategies (e.g. transaction types, locations, time periods) generate the most profit for the firm?
- How or why does the company make/lose money in a particular book or strategy?
- What is the return on investment (ROI) on each dollar of collateral infused into the trading business?
- How do you leverage analytics to assess opportunities within new markets?
- How do you use analytics to proactively identify arbitrage opportunities in the market?
- What potential merger or acquisition targets offer the best return when combined with current activity?

The variety and impact of these questions can vary greatly, but analytical tools greatly facilitate answering each one. There is quite a bit of preparation required to generate results for each of these, but there is immense value in the answers as an aid in decision-making.

There are two main types of analytics – 'predictive' and 'descriptive'

As the chart indicates, each serves a different purpose. Understanding how and when to use each based on the question being posed will help to either refine the initial request or result in a more useful answer.

Figure 1: Descriptive & Predictive Analytical Tools

	Analytical Tool	What it indicates
Descriptive Analytics the "what"	Standard Reports	"What is happening?"
	Ad-hoc Reports	"How many, how often, where?"
	Query / Drill-Down	"What exactly is the problem?"
	Alerts	"What actions are needed?"
Predictive Analytics the "now what"	Statistical Analysis	"Why is this happening?
	Forecasting / Extrapolation	"What if these trends continue?"
	Predictive Modeling	"What will happen next?"
	Optimization	"What's the best way to capitalize on what will happen?"

Source: Accenture, 2013

Using Analytics to Answer Questions and Refine Strategy

There are a wide variety of strategic and tactical questions firms can use analytics to investigate. At the corporate level, companies looking to acquire other operations may want to better understand how the target's trading positions may impact the parent company's risk or cash positions. They may also want to understand the inherent strategies within target portfolios to see if they are complimentary to their own.

Analytics in Action

High Frequency Trading

When it comes to arbitrage opportunities, there are many well-known examples in the equities trading world where companies employ analytics such as high frequency trading (HFT) to take advantage of micro-level price inefficiencies that, in aggregate, can net sizeable revenues for the firm. While it is not yet common in the commodities markets, it is another example of how analytics technology can help drive trading strategy.

Companies looking to enter new commodities markets may want to use analytics to shape their trading strategies. Often the firm has been tracking the market segment's performance and can take 'virtual' positions to see how they perform over a period of time.

Why the Questions Matter

Different analytical tools and services can certainly evaluate many questions. But just as a scientist must make a hypothesis prior to setting up complex experiments to test it, so too must analytics users.

There are many service providers emerging in this space that claim to have packaged solutions that take the guess work out of this process; however, our experience with clients suggests that these tools do not always provide the insights or value firms are looking to achieve. We believe that this is because the questions differ at each firm as their corporate and trading strategies vary. One size does not fit all.

Tailoring counts. The good news is that most analytical tools have very advanced simulation and mathematical engines that can answer a wide variety of queries. But each tool must be configured properly upfront to drive toward an answer. This is where effectiveness comes in. Despite the vast computing power now available via solutions like the cloud, some simulations could take many hours to run, and waiting until critical reporting times makes this an issue for many companies. Not only will calibrating analytical models properly save computing time, it also allows companies additional time to evaluate the results and refine their initial queries to see how the results may change. This is critical within the trading industry as markets evolve and as firms refine trading strategies based on model outputs.

Having the Right Information – and Time to Prepare

The quality of the data supplied to any analytical tool is, of course, critical. Spending more time forming the questions helps in this respect too, by clarifying which data sets are needed. However, getting the right data is still a lot of work.

Take, for example, one of the questions mentioned earlier. If a firm were looking to understand how their current trading strategy may impact EPS, it would likely require the following information:

- Current trading positions
- Current and historical settlement and forward prices
- Trading volumes
- Mark-to-market valuations
- Interest rates
- Shares outstanding
- Economic to GAAP conversions
- Cost basis
- Forward price curves
- Volatilities and correlations
- Opportunity cost of finding answer in lieu of performing other value-add activities

The above list is not comprehensive and will vary for each company – there are many ways to run models to drive results that may require different sets of inputs. Regardless, the amount of time required to gather this information and ensure its quality can be onerous and might take weeks; however, the key to quality analytical results is in the inputs used. Many of these inputs are derived from other data that requires significant time and process to generate in and of itself (e.g. forward curves, volatilities, correlations, mark-to-market valuations, etc.). In order to organize and generate necessary inputs, many trading organizations employ a corporate data warehouse to aggregate and store all data. This provides a central location for users to access, allows for seemingly unrelated data to be viewed 'side-by-side' to uncover trends, and creates a single place to store 'verified' information. Well-maintained data warehouses also provide efficient[1] data sources for analytical tools as they do not have to query multiple systems to get all necessary data. Clients can customize their data warehouse to best suit their needs and align its structure with the key questions they are trying to answer with their analytics engines.

1. Transforming Trading Operations - Driving Efficiency in Trading Organizations, Accenture, April 2013


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Conclusion

The continued emergence of new analytics technologies offers a powerful tool to small and large traders alike. The computing power and sophistication behind these tools makes it possible for firms of every size to unearth trends that can improve the profitability of their future strategy. We believe that the most important differentiator in unlocking the value of analytics (and maximizing the investment in analytical technology) is not in the tools but in clearly defining the questions a firm is looking to answer. In an age of instantaneous information sharing, it is becoming paramount for trading firms to bring corporate strategy to bear in its every day transactions. This means routinely using analytics to understand shareholder and financial impact, capital allocation efficiency and emerging market trends. Defining the questions a firm is looking to answer using analytics, from the C-suite through to the individual trader, may well become a key differentiator between success and failure in a firm's commodities strategy.

About the Authors

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Further Reading

Trading Operations Offering Brochure

Transforming Trading Operations - Challenges for Commodity Trading Clients

Transforming Trading Operations - Driving Efficiency in Trading Organizations

Coming Soon...

Transforming Trading Operations: Operating in a Regulatory World
Release date targeted for July 2013

Transforming Trading Operations: Achieving Effective Cost Reduction
Release date targeted for August 2013

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