

# Prop Trading Technology Evolves

Common denominator is the need for ultra-reliable connectivity, access to the best liquidity, and lightning-fast execution

**P**roprietary trading firms run the gamut from small, “garage-level” entrepreneurs focusing on one or two trading strategies, to large corporate shops with highly sophisticated in-house quantitative programs and information technology. Providers of trading technology providers are customizing solutions to satisfy all constituencies.

“At one end of the spectrum are prop firms that are highly focused on trading strategy and style, but with relatively weak IT infrastructures,” Marty Leamy, Americas president at Orc Software, told Markets Media. “At the other end there are firms that have strong IT infrastructures and develop multiple trading strategies.”

Common denominators include connectivity to markets and access to liquidity. “From a technology perspective, proprietary firms require low-latency connectivity in order to extend or expand their trading strategies,” Leamy said.

For high-end users, Orc’s signature product is Liquidator, a Java-based algorithmic trading engine that enables users to run a large number of complex trading strategies. Liquidator can send 100,000 orders per second and is scalable to an unlimited number of applications of a strategy. “These firms develop their trading strategies in Java and we provide the connectivity,” Leamy said.

For smaller prop firms whose technology needs aren’t so massive, Orc offers Spreader, a server-based, arbitrage-style trading product with built-in, customizable trading strategies. “Orc Spreader enables high-performance low-latency, high-frequency trading out of the box without the need for a software engineer to develop trading strategies,” said Leamy.

It includes built-in trading logic designed for arbitrageurs and spread traders looking to gain a trading advantage by reducing missed hedges and adding products and markets to grow their business.

Prop traders who are exiting big bank desks in the wake of Dodd-Frank and the Volcker Rule

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almost certainly will lack the IT infrastructures and budgets of their former employer, yet they will require similar functionality in order to get off the ground and compete in a hyper-competitive space.

“These are traders who are used to heavy-duty infrastructure being supplied by banks,” said George Michaels, chief executive officer of G2 Systems, a boutique consultancy and software integration firm. “Where they need help most is in trade execution.”

G2, which provides programming and customization services for hedge funds, is well-versed in the nuances of both multi-billion dollar hedge funds and proprietary investment departments of major brokerage houses. Prior to founding G2, Michaels was chief technology officer at Carlson Capital and vice president for energy risk management at Goldman Sachs.

Many prop trading firms are organized as hedge funds, which preserves autonomy for partners and provides tax benefits. “It’s a structure that’s familiar to people who are used to working at a prop desk at a large bank,” Michaels told Markets Media.

## Quant Model Execution

G2 provides such firms with the technology they need to execute trades based on quantitative models they’ve developed during their stints at prop trading desks. “Our niche is in execution of quant models,” said Michaels. Through black box algorithms, prop traders “have decision making wrapped up in their software,” he said. “They may take the intellectual property with them when they leave, or if not, they can recreate it. Where they need help is in execution.”

G2 provides a no-frills execution platform that bolts on to the black-box algos. “We’ve developed an execution platform that’s a poor man’s Flextrade or Portware,” said Michaels, referring to two industry leaders in algorithmic trading platforms. “They don’t need a fancy user interface; what they do need is cheap connectivity to executing brokers, and we provide that connectivity, whether it’s in FX, equity derivatives, fixed income, or credit derivatives.”

The need to connect to multiple brokers is another change from the prop trading environment at large banks, which typically trade through a single broker. “They’re no longer tied to one executing broker, and setting up the connections to multiple

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brokers is a nontrivial exercise,” Michaels said.

G2’s clientele is made up chiefly of small trading shops lacking IT resources, and large firms that have the resources but choose to outsource the task of building infrastructure.

Mid-sized firms are more likely to buy their technology from “name” providers. “They’re too small to build their own (graphical user interfaces), but they still want all the functionality, so they will buy an Eze Castle or Charles River,” said Michaels. “The largest shops don’t care about a fancy user interface, they just want raw execution.”

Prop traders increasingly have access to technology that allows them to design and execute automated trading programs with ease. Lightspeed Financial is developing an application program interface that will provide programmatic access for both quoting and order entry through its flagship product, Lightspeed Trader.

The API, which is now in beta, will enable prop traders to manually execute large baskets of trades instead of executing them individually.

## ‘Grey-Box’ Solution

“The API allows traders to populate a basket of trades from an Excel spreadsheet and trade them manually,” Andrew Actman, chief strategy officer at Lightspeed, told Markets Media. “It’s not fully automated; it’s a grey-box solution.”

Lightspeed’s automated product historically catered to a highly sophisticated, high-frequency black-box/program trading population requiring its ultra low-latency co-location product Lightspeed Gateway. The new Lightspeed Trader API will allow professional manual traders to trade via programs with the assistance of the Lightspeed Trader GUI.

“This will allow us to access an entirely new subset of black-



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box/program traders who require some additional visual and mechanical assistance from a GUI,” said Scott Ignall, chief technology officer at Lightspeed. “It extends our footprint beyond the high-speed, co-location space to address lower-end users who are trading off spreadsheets. There’s a large market for that.”

The API is analogous to a software development kit Lightspeed recently introduced for high-performance traders. The SDK, which complements Lightspeed Gateway, comes prebuilt with sample trading strategy source code, which end users can deploy to create their own trading strategies. The product also includes source code to configure, monitor and control a black-box trading system.

Lightspeed is developing a scanner product that detects trading opportunities. “The scanner gives traders the opportunity to find equity symbols that are breaking new highs and lows, and to pinpoint stocks based on price, volume, market or sector,” Actman said.

## Event Focus

Prop trading firms are voracious consumers of event-based data that can trigger trades.

“Prop trading firms by definition are investing with their founders’ money, so they’re looking for an edge such as event data,” Ryan Terpstra, founder and CEO of Selerity, which provides machine-readable news and event data to prop trading firms.

Fully automated trading is now commonplace for scheduled events such as corporate earnings reports, and the methodology is increasingly being employed for unscheduled events as well. “Some ultra-sophisticated firms are doing automated trading on mergers and acquisitions, pre-announcements on earnings guidance, etc.,” Terpstra told Markets Media.

Event data can be defined as highly structured factual information related to breaking events that trading firms use to make

real-time program decisions. Sophisticated firms have begun sourcing new real-time content sets outside of market data as a source of competitive differentiation.

The ability to structure the core and contextual elements of a breaking event sets event data apart from news or even machine-readable news. “One of the biggest limitations algorithmic trading models have versus human traders is the computer’s inability to quickly judge the contextual information around a news event,” said Terpstra.

Breaking-event data incorporates the contextual elements around an event, shoring up the deficiencies associated with machine-readable news. “This form of information is structured and distributed more like market data than other forms of real-time information,” said Terpstra. “This has made it easier for firms who are traditionally quantitatively focused and familiar with market data feeds to rapidly integrate

event data as a new real-time factor into their trading strategies.”

Built around the real-time discovery and interpretation of events such as employment statistics or court rulings, event-data systems combine sophisticated real-time search and extraction technology with proven market-data distribution technologies to rapidly identify, distill and deliver machine-readable insight to electronic trading and risk-management firms.

Although market data gives traders an accurate picture of certain market statistics, event data delivers a comprehensive view of events that might move markets.

“Without the complete view of the state of global events, a financial firm risks being blind-sided by unexpected news that can impact its short-term and long-term trading strategies,” Terpstra said.

As automated trading strategies become more prevalent, more firms are co-locating their trading infrastructure near mar-

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ket centers' data feeds and order matching engines.

This model can also be applied to event data, as placing servers directly at the source of where event data is produced and disseminated allows real-time consumption of the pertinent data and immediate order execution.

"We're disseminating event data much like exchanges distribute market data, through UDP Multicast and delivery over 10-Gigabyte fiber data feeds," said Terpstra. "We are co-located in data facilities along with our clients and execution matching engines."

The ability to programmatically monitor important events on thousands of companies can be critical for prop traders using automated market making. "If you're making a market, you can't feasibly stay on top of breaking events using manual methods," said Terpstra.

Event data allows traders to filter out unimportant extraneous information and home in on critical market-moving data, providing greater visibility into events that could impact trading decisions. "Prop traders are able to have information about impactful events in real-time, because of its low-latency, structured delivery," said Terpstra.

Though market data will continue to provide the best perspective on the state of the securities markets, event data complements prop traders' real-time perspective into the status of world affairs. "It is the natural evolution of the market," Terpstra said, "and is one of the untapped opportunities for asset managers, hedge funds and market makers for increasing alpha and managing risk."

## Flexibility is Key

In a highly turbulent trading environment where today's strategies can be obsolete tomorrow, prop traders do not want a technology platform that's wedded to a single asset class or trading strategy.

InfoReach, a provider of global, multi- and cross-asset, broker-neutral trading solutions, has developed its technology to be implemented rapidly and with maximum flexibility. "InfoReach designed its architecture from the ground up to be scalable, multi-asset and fully customizable; its solutions are easily deployed within weeks," InfoReach CEO Allen Zaydlin told Markets

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Media. "This is a key differentiator from other providers who take six to 12 months just to deploy an EMS with similar functionality."

Core products include the InfoReach TMS (Trade Management System), InfoReach "HiFREQ", and the InfoReach FIX Engine. Also called an EMS, the InfoReach TMS consolidates pre-, in-, and post-trade analysis tools, pre-built and broker-provided algorithms, real-time, interactive charts and position monitoring, multi-asset and portfolio trading capabilities, order management and FIX connectivity in a single platform. Traders can employ strategies across equities, options, futures and FX.

InfoReach FIX engine is available separately to traders who don't need a front-end EMS but still want multi-broker routing. It can connect to any global FIX-compliant destination, and connects to more than 140 brokers, ECNs, MTFs, exchanges, ATSS, dark pools and other liquidity sources. The EMS and FIX engine can be used separately or in tandem. "If a trader already has a broker, then they can just use the EMS without the FIX connectivity," said Zaydlin. "But if a prop trader wants to execute through more than one broker, they can use EMS in conjunction with the FIX connectivity routing. Conversely, if a firm already has its own EMS, they can just use InfoReach's connectivity."

HiFREQ is a turnkey offering that lets traders harness high-frequency technology without having to build and maintain their own infrastructure. It supports high-speed, high-volume strategy-driven trading for global equities, futures, options and foreign exchange, and can execute 20,000 orders per second at sub-millisecond roundtrip latency.

"Once a prop trader identifies an opportunity, it needs to be put into action quickly," said Zaydlin. "Markets are cyclical; what worked a few months ago might not work today." ██████████



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