

# Tackling pre-trade risk

Hyannis Port Research (HPR) has recently announced a new version of its flagship pre-trade risk solution, Riskbot. WSL catches up with CEO **Tony Amicangioli** to discuss details and why trading firms need the right technology that can identify bad trades before they become a problem

By Anna Lyudvig



TONY AMICANGIOLI

**WALL STREET LETTER (WSL):** Tell us about HPR and your pre-trade risk solution Riskbot?

**TONY AMICANGIOLI (TA):** Hyannis Port research was founded in 2011, primarily in response to the new Market Access Regulation (15c3-5). However, our charter was to become the number one provider of market access equipment, wherever the opportunities may be.

Our current offering, Riskbot, is a complete Market Access and Pre-trade risk gateway, designed to provide a complete solution for any trading entity accessing the equity markets. The system is comprised of two major components: Riskbot G4, an FPGA gateway appliance that monitors trading traffic at the various exchanges, and the M5 Risk management enterprise application that provides a number of features such as portfolio risk controls, kill-switch functionality and latency measurement, just to name a few.

**WSL:** What updates have you recently made?

**TA:** With the release of Riskbot 3.0, we focused on supporting fault-tolerant and disaster recovery scenarios across large deployments. This allows our customers to feel secure that if a system fails anywhere in the technology stack, we can provide instant standby recovery systems with no perceptible disruption. We felt this was necessary to attract leading market participants.

Cyber-security enhancements were also included. We realized our devices sit between exchanges and market participants such as quantitative hedge funds, whose internal systems house some of the world's most closely guarded proprietary information. The new Riskbot is now capable of carefully controlling what information can pass between these entities to ensure cyber-attacks are not possible whether from fund to exchange or vice versa.

Finally, agility was a crucial goal. Riskbot has been transformed from a first product instance to a more general platform allowing us to code to new markets in a matter of weeks, which is a considerable improvement. We now support all major US exchanges as well as fourteen liquidity pools.

**WSL:** Why is there a need for Riskbot?

**TA:** Firms have been under increasing regulatory

scrutiny and this has been one area where solutions have been very difficult to implement. The first phase of this market consisted of numerous firms cobbling together their own solutions. This was out of necessity because many brokers could not provide solutions that met their needs. In the early stages of the 15c3-5 rule implementation, a number of entities became Broker Dealers in large part due to the need for these controls. With Riskbot, the major brokers are able to provide an experience comparable to what the most sophisticated trading shops would build while reducing the substantial operational costs associated with BD status.

The HPR team believes very strongly that the electronification of the financial markets is still in its infancy. Every link to every asset class across every geography worldwide represents a medium to long-term opportunity for us. Meeting all of the regulatory requirements imposed by the MAR rule, in our case forty five plus risk checks, all in less than the time it takes light to travel five hundred feet is not an easy task. Some of our clients choose us because they do not possess the internal resources to provide such technology – leaving them on an uneven playing field with respect to other lagers and better equipped entities. Other clients are beginning to realize the cost and organizational challenges Broker-dealer status represent is prohibitive. Our interaction with the market suggests you can expect to see trading shops who became BDs in response to the new regulation begin to rely on external prime brokerages to provide this service.

**WSL:** What are bad trades and how does Riskbot identify those?

**TA:** We test for a substantial number of bad trade types, which can vary. It could be something simple like so-called 'fat-finger' checks where a trader accidentally selects an excessive quantity that could cause disruption in an otherwise orderly market. More advanced checks include time-based or frequency tests such as repeat order frequency to determine whether an algorithm has malfunctioned and begun running in an infinite loop.

**WSL:** What type of risk checks do you perform?



**TA:** We perform more than 45 checks – these range from basic ‘sanity’ checks (i.e price, quantity, and notional value at reasonable settings) to advanced features such as price collar functions that are Reg. SHO aware where we require real-time price information streaming into our equipment.

**WSL:** Tell us about the technology behind Riskbot

**TA:** Riskbot’s revolutionary technology is comprised of a wide array of technologies from hardware design and FPGA technology, to front-end GUI technology, and everything in between. That includes high performance embedded software as well as enterprise software technology. This advanced technology is designed to be easy and simple to use and has enabled HPR’s clients to grow their businesses and acquire more customers.

**WSL:** Riskbot’s technology can inspect the details of a trade in 450 nanoseconds. Can you tell us more?

**TA:** HPR provides the industry-leading latency experience through supercomputing technology, provided in a silicon chip. We achieved this performance by hiring some of the industry’s best computer architects who had experience in this very niche type of architecture. One in particular was a major player in the processor design for a well-known mainframe computer.

**WSL:** The SEC Market Access Rule requires broker-dealers with access to trading securities directly on an exchange or alternative trading system to maintain a system of risk management controls. So why should one use Riskbot and not an in-house system?

**TA:** It’s a matter of fundamental market efficiency; progressions of this type are not unusual in many historic market contexts. The value of building in-house must necessarily offer a benefit whether it is cost or competitive advantage for such internal programs to make sense. In the early stages of the Market Access Regulation, the primary motivation was the competitive advantage, as building a better system was a strong differentiator for many firms. With HPR providing the fastest possible solution and with the economies of scale and benefits associated

with a central provider of technology, the advantages outweigh the inherent risks of building such complex systems in-house.

Finally, we always believed the notion of large bulge bracket firms trying to be good at banking, while building network equipment wasn’t going to last. It is always best for businesses to focus on what they do best.

**WSL:** What’s your competitive advantage?

**TA:** At present, we believe HPR is the clear leader in this space. Speed is first and foremost our competitive advantage and based on our market knowledge, HPR’s latency has proved to be industry-leading. Secondly, product completeness is another strong factor. Our Riskbot platform is not just a pre-trade risk device, but also includes features ranging from drop copy service, integrated precision latency measurement, distributed deployments, full portfolio risk checks, and more.

**WSL:** You are currently supporting 18 stock exchanges in the US; what are your expansion plans?

**TA:** While we are trading in the US, we are also actively trading a substantial amount of volume in Asia-Pac, particularly Australia. With the rapid extensibility improvements, HPR will be able to take a new market or trade liquidity pool from concept to customer testing in a matter of weeks, rather than months. At present, HPR is engaging in extension into the futures markets in anticipation of new regulatory demands. We also plan to continue expansion across various geographies.

**WSL:** What’s next for HPR?

**TA:** Over the next year, HPR will be heavily focused on latency reduction. While 450ns may seem like a very small period of time, it is clear some market participants want to see technologies that can reduce latency substantially. HPR is well-positioned to pursue this through a number of planned innovations. HPR will also begin to expand along functionality lines, and in particular, surveillance. Expect some very exciting announcements over the coming months from HPR. ■