

An Interview with Dr. Michael Kirch, CCO, Beacon

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By Commodity Technology Advisory LLC

ComTechAdvisory: *What is the Beacon platform and what was the impetus for developing it?*

Dr. Michael Kirch: Mark Higgins and Kirat Singh founded Beacon in 2014 to create a modern collaborative technology environment in the world of institutional finance. Historically, financial institutions and vendors have built closed proprietary technology to solve specific business problems. At Goldman, JPM and BAML, Mark and Kirat were very successful in building cutting edge trading systems based upon open transparent platforms that can support a very wide range of tasks. Beacon enables the same level of innovation and business agility for our clients and makes it easy for software or data vendors to create and offer third party packages in the Beacon app store.

I worked for twelve years as a front office quant (called "Strategist") in Goldman Sachs, where my team and I created a huge amount of value for the Commodities trading business in leveraging Goldman's equivalent of Beacon which is called Secdb. I ran my own consulting company Covado in 2014-2015 where I offered commercial-technical advice to commodity traders. All of Covado's clients were severely handicapped in their technology, and they were seeking my advice on how to improve functionality, agility and scalability of their technology landscape. I realized that the Beacon platform is exactly what Covado's clients needed, so I joint Mark and Kirat and we hired a team of very experienced developers, including former Goldman Sachs strategists, to build out the Beacon commodities offering.

In short, Beacon is the only vendor system on the market that integrates end-user applications for the financial services industry within a comprehensive developer platform. It has two main comonents: b-Core and b-Apps. Our b-Core platform streamlines complex functionality, from automation of cloud infrastructure services to controlled development and deployment at scale. This

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means commercial developers can focus on solving business problems as opposed to worrying about the platform itself. b-Apps include cutting-edge modules and applications in the trading and risk management space that run on top of b-Core. The source code for b-Apps is fully transparent to our clients, making it very easy for our clients' internal developer teams to extend b-Apps with their own proprietary analytics.

ComTechAdvisory: *How is the Beacon Platform delivered at a client site and what benefits does this bring the users?*

Dr. Michael Kirch: Beacon is primarily delivered as a cloud-hosted solution, though we also offer local installs and hybrid solutions.

The benefits of the fully cloud-hosted solution in terms of scalability, agility and cost efficiency are now widely acknowledged. What's unique about Beacon though is that it's not just a cloud-hosted vendor product, it's also the development platform that makes it easy for our clients to build their own cloud based solutions. Everybody wants to "get on the cloud", but it's actually quite hard to figure out how to connect the data, the compute infrastructure, the software-defined business logic and front end GUIs to create end-user applications that are easy for developers to amend and add to. The Beacon Core platform solves all those problem for our clients. It enables our clients to really "get on the cloud".

The initial delivery and integration is extremely rapid. We routinely deploy Beacon for a new client into their own cloud account and connected to their existing systems via a secure VPN in less than one week. The deeper integration with market, positions and reference data required to solve the most pressing commercial problems can typically be achieved within three months, sometimes substantially less. Beacon already comes integrated with a continually growing list of trading venues such as ICE and CME as well as market data vendors such as Morningstar.

On an ongoing basis, our continuous integration model for software updates and smart definition of Core APIs ensures the platform stays current and avoids high update costs associated with the standard vendor approach.

ComTechAdvisory: *What has the founder's backgrounds in large banks provided Beacon?*

Dr. Michael Kirch: What Mark and Kirat learned at Goldman and later perfected at JPM and BAML is how to build a platform that enables innovation yet remains controlled and scalable.

The FIS logo consists of the letters "FIS" in a bold, green, sans-serif font. Above the letter "I", there are three small green dots arranged horizontally.

Generation 10

The OPENLINK logo features the word "OPENLINK" in a blue, sans-serif font. A blue circular arrow icon is positioned to the left of the text, partially overlapping the letter "O".

It's still mind-boggling to me how far ahead of its time Goldman's Secdb platform really was when it was developed in the early nineties. The main ideas are similar in many ways to today's Android and iOS platforms. Those platforms make it easy for very small developer teams to iteratively build and test their own proprietary apps to be sold and deployed to millions of users on the Google or Apple App store. Goldman figured out how to enable that same nimble iterative development and deployment process at scale for proper enterprise technology long before anybody else.

Getting that balance of control and innovation right is tricky. At Goldman, if a trader wanted to execute a trade which could not be appropriately booked in Secdb, we had to come up with a plan for how to extend Secdb to properly capture all the details and risks inherent in this trade and get additional very senior sign-offs prior to committing the firm to the trade. Typically the approval required full remediation within one month and a solid process for how to manage the transaction during the remediation phase (typically involving a reasonable approximation in Secdb). The actual remediation post execution was closely monitored. The net effect was that at any point in time, all of the firm's risks were accurately captured in Secdb. That control enabled Goldman to take more risks and make more money than its rivals.

In building Athena and Quartz from scratch and onboarding thousands of in-house developers at JPM and BAML onto those platforms, Mark and Kirat learned valuable lessons on how to apply these concepts outside of Goldman.

This idea of control and scalability I think is important regardless of the size of the trading organization. Whether you have five in-house developers or five thousand, at the core you need the same tools if you want your developers to build scalable enterprise IP. Excel and SQL are great, but they only get you so far.

ComTechAdvisory: *What can you tell us about your clients in the commodities space and commodities specific functionality in Beacon?*

Dr. Michael Kirch: We have a few big name clients in the commodities space. For a US Power client we've deployed a full front-office trading and risk management solution. It ranges from trade booking / book keeping and trade life cycle events (settlements, option expirations etc) to risk, PnL and VaR and includes comprehensive pre-trade analytics, the market data management platform and of

course the b-Core developer platform. Integrating all of the above in one transparent tool set enables our client to price both simple and highly complex deals and manage their risk in an efficient, sustainable manner.

A large oil trader is using Beacon as a bolt-on to their existing ETRM systems, to enhance their front-office pre- and post-trade analytics, in particular for options or assets with embedded optionality. And we've just kicked off a pilot project with a large multi-national coal trader to supply enterprise VaR and CVA out of Beacon.

Today, we offer the above functionality out-of-the-box for all energy commodities, and we can easily add non-energy commodities.

Clients who want to build their entire business logic and analytics in-house can license just b-Core, our business-agnostic cloud development platform, with all the tools and workflow management developers need to be productive. Our clients can then add individual modules for business logic and applications such as commodity markets and time series analytics, trading and risk management tools or VaR and CVA, depending entirely on their need. All of these modules have been developed in-house by Beacon so they genuinely form one system (beyond being "integrated") and they benefit from decades of experience of our team in building best-in-class tools for some of the most successful commodity trading desks.

ComTechAdvisory: *Where do you see Beacon having appeal in the commodities sector?*

Dr. Michael Kirch: Eventually I think Beacon will have a very broad appeal across various technology questions in commodities. Out of the box, our current offering is directly applicable to enterprise risk management, portfolio management and risk/trader tools, as well as data management and treasury functions of commodities players.

Regardless of the end-user application delivered in Beacon, the appeal of Beacon derives from the need to integrate solutions, replace spreadsheets and to be able to access and utilize information (big data) in real-time across systems. Beacon is an integration platform with the ability to create and deploy custom functionality as well as become the data repository of record for prices, market data and all of the other kinds of data, such as counterparty reference data, that enterprises need to run their businesses.

The additional capabilities and insights that Beacon affords users help the client keep up with market change and add business flexibility to innovate and adapt.

It's an open secret in our industry how much business-critical functionality is built outside official CTRM systems in poorly controlled tools and manual processes based on Excel/VBA and the like. Curve marking, relative value models, market risks for complex transactions, even enterprise risk metrics and treasury functions are typical examples. At the end of the day, if commercial decisions are derived from tools and processes that are not transparent, not controlled and not scalable, then that severely limits what kind of risks the organization can manage. Manual processes are very costly and error prone, so there's always that nagging discomfort within the organization, that awareness that at any point something could blow up.

Beacon allows our clients to turn this picture on its head.

ComTechAdvisory: *Who do you feel that you compete with and why?*

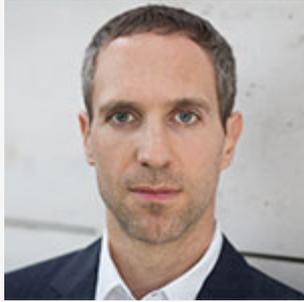
Dr. Michael Kirch: We don't think there's a direct competitor to Beacon on the market today.

We rather see Beacon as very complementary to the existing vendor offering. Our value proposition is not about replacing existing CTRM systems, or replacing existing Excel/VBA tools. Rather, it's about giving our clients the right platform to start building new solutions, and grow from there.

There are many companies in the broader CTRM space that offer similar end-user functionality, but none that includes the developer platform. As far as I can see, quantitative trading analysts or other front-office developers don't use any of the existing CTRM systems as the platform within which they build proprietary tools and analytics. For example, if a trader wants to backtest a new trading strategy, or calculate his options risk and PnL using a new skew model, or calculate historical and forward-looking payouts of a virtual power plant, then a trading analyst can develop, test and deploy any of those in Beacon within a few days. That's just not possible in any existing vendor product that I'm aware of.

However, because Beacon is so new and radically different from anything else on the market today, I think the biggest hurdle we have to overcome is for our clients to fully buy into the vision of Beacon as their main platform, not just for end-user functionality but also as the platform

from within which to develop proprietary technology solutions. That's a huge cultural shift which requires a lot of trust, vision and, ultimately, senior leadership.



**Dr. Michael Kirch, CCO,
Beacon**

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Dr Michael Kirch spent twelve years in Goldman Sachs's commodities business, leading the EMEA Commodities Strategies team as a Managing Director and working on hundreds of physical and financial commodities transactions. He founded Covado in 2014 and joined Beacon as Chief Commercial Officer in 2016.

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