

Machine intelligence startup Ayasdi nets \$55m in series C, plans to double headcount

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Ayasdi (pronounced Eye-az-dee) recently landed \$55m in funding, taking its total haul to \$100m. The six-year-old advanced analytics startup, which refers to itself as offering 'machine intelligence,' develops software applications to help companies drive meaning from complex data sets. The company is differentiated by its adoption of a branch of mathematics called topological data analysis (TDA). Available as a cloud or on-premises deployment, Ayasdi reports significant gains in new customer accounts and revenue.

The 451 Take

Ayasdi is calling this year a breakout year, a turning point for the company. The fresh \$55m series C capital is more than all of the previous rounds combined (\$45m), a definite tip of the hat from the investors. The Ayasdi product leverages TDA, imported from its three founders courtesy of the Stanford University mathematics department and caters to companies with complex data sets. The product may be considered overkill for some companies, but we would agree that for those that do fit the target audience, it offers a unique perspective on complex data sets. With a lot of companies offering a version of advanced analytics and machine-learning capabilities, it may be difficult to stand out from the crowd, however.

Context

Ayasdi has made great strides since our last check-in. The new \$55m series C funding round was led by Kleiner Perkins, and also involves existing investors Institutional Venture Partners (IVP),

Khosla Ventures, FLOODGATE Fund and Citi Ventures, as well as new investors Centerview Capital Technology and Draper Nexus. The round comes at a good time for the company because business is clearly picking up. In addition to the new capital infusion, Ayasdi reports a significant uptick in customers, revenue and a number of new product enhancements.

On the business front, Ayasdi claims a 400% growth rate (a factor of 5x) in customer bookings for 2014. Revenue is in the double-digit millions; however, no specific numbers were given. Ayasdi specifically targets the Fortune 1000 sector and provided a representative sample of companies that include Citigroup, Siemens, Lockheed Martin, and Mercy, although the company did not disclose whether these were new or existing customers. Moreover, Ayasdi reported a significant improvement (4X) in its average selling pricing, hitting \$1m or more per customer.

While the company is only six years old, it has found its best traction in the healthcare, financial services, and government verticals. Ayasdi touches a mix of other verticals as well, including energy, life sciences, and high-tech manufacturing; however, about two-thirds fall within the previously mentioned verticals. Ayasdi is looking to hire sales staff with specific skills that will enable the company to expand into other verticals.

There are roughly 100 employees and Ayasdi plans to double that to 200 by the end of the year. A portion of the capital infusion is slated to go toward beefing up the sales force as previously noted, but there are also plans to expand the engineering team, specifically with regard to driving new product development. Ayasdi confirms that the executive team is in place, but it is worth pointing out that president and co-founder Gunnar Carlsson, who had been splitting his time between Stanford University and Ayasdi, has recently moved to full time, leaving his professorial post at Stanford University. As an aside, it was Gurjeet Singh (CEO), Gunnar Carlsson (president) and Harlan Sexton (VP of research), three mathematicians at Stanford, that founded Ayasdi.

Technology

From the outset, Ayasdi has targeted the challenge of finding insights within complex data sets. The idea is that while a data set may be large, a more important aspect is its complexity. Ayasdi believes mathematics is the best way to find the insights from complex data sets, specifically using TDA, a branch of mathematics honed by Ayasdi's three founders.

At a high level, the Ayasdi product leverages TDA, which finds patterns and relationships in complex data sets and identifies the 'shape' of the data. A regression model, for instance, shows data in the shape of a straight line. However, Ayasdi contends data can be represented in other

shapes as well, such as a cluster, loop or flares. Ayasdi considers the ability to identify different 'shapes' from complex data is one of its key differentiators.

While TDA is the primary technology, the company also leverages machine learning and artificial intelligence combined with a variety of algorithms. Because of this combination, Ayasdi considers its offering 'machine intelligence,' simply because it believes it offers deeper capabilities beyond what is available in analytics packages (e.g., SAS and IBM SPSS) and in visualization tools (e.g., Tableau, Splunk).

Products

Product-wise, Ayasdi offers Core, Care and Cure. The Cure and Care products are niche products geared toward the healthcare and life sciences sectors. Specifically, the Care product is geared toward addressing clinical variations while the Cure product is geared toward doing biomarker discovery. Ayasdi will continue to build specialty applications in other verticals as necessary going forward, but the primary focus over the next 6-12 months will be driving up development on Core while also moving the product from a single offering to a product suite.

Ayasdi targets primarily the C-level suite or the group or divisional decision-maker. The idea is that based on Ayasdi's unique use of mathematics (TDA), it can lead to better decision-making capabilities. Ayasdi also targets data scientists who are the primary users of the product and provide the input for the group or divisional decision-maker.

Ayasdi accepts a variety of data sources, including SQL, NoSQL, Hadoop, CSV and text files. Enhancements include APIs for both data ingest and outputting; specifically, new Hadoop connectors for ingest and a REST API toolkit for outputting to Tableau and Qlik dashboards are now operational. The connectors to Hadoop are noteworthy. Ayasdi claims a complementary play with those organizations running Hadoop deployments and recently inked partnerships with Hortonworks, Cloudera, Teradata, Intel and Accenture. Having watched the Hadoop space for some time, particularly in driving advanced analytics capabilities, we believe this is a good strategy for Ayasdi, especially for an industry that continues to struggle to get tangible insights out of large, unstructured data repositories.

Pricing for Ayasdi is a subscription model based on annual installments. The product is available as a cloud or as an on-premises cloud setup. Pricing is not based on users or data but instead on the enterprise revenue of the organization. The reason for this is to drive broad adoption within the organization. The base subscription price includes a single installation. Additional installations, for

instance, an installation in a different location, are priced separately. Ayasdi pursues the 'land and expand' strategy with additional installations considered the 'expand' component.

Competition

Ayasdi's primary competition comes from the larger incumbent players - SAS Institute, IBM SPSS and MathWorks' MATLAB - all of which offer advanced analytics packages in some shape or form. Context Relevant is another company incorporating machine learning that targets financial services firms, a sector Ayasdi has been chasing since its founding.

Like Ayasdi, a number of companies are claiming to offer advanced analytics, which further muddies the water. Tableau, Qlik and TIBCO/Spotfire all claim advanced analytics capabilities - predictive analytics, for instance - and for many companies this capability is sufficient. Generally, however, we would classify the data discovery/visualization players as being complementary offerings to Ayasdi.

We also think Ayasdi might be compared with Alpine Data Labs since both companies are trying to crack the knotty advanced analytics nut. However, Ayasdi claims never to have competed head-to-head with Alpine, which could be explained by the fact that Alpine targets a broader audience and stresses a collaboration approach while Ayasdi is chasing senior decision-makers and data scientists.

SWOT Analysis

Strengths

Ayasdi brings a fresh approach to advanced analytics by leveraging a unique branch of mathematics (topological data analysis) as the basis for its product. Having the leading minds on the subject also doesn't hurt.

Opportunities

We concur that attacking the Hadoop space by helping companies find insights from piles of unstructured data is a good path. The differentiation of topological data analysis will continue to set the company apart in a very crowded field.

Weaknesses

The Ayasdi product caters to organizations with complex data sets. The product is geared to the C-suite, but it also requires a data scientist to do the analysis. It can be overkill for some companies.

Threats

By targeting senior executives and data scientists, Ayasdi could find it challenging to dislodge some competitors that are targeting a broader, less technical audience by offering some advanced analytics capabilities.

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