

## REPORT REPRINT

# Kogentix targets operational aspect of machine learning using services, vertical twist

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The machine-learning-based analysis sector continues to gather speed, and Kogentix is one of the latest market entrants. The startup is revving up a cloud service and professional services play that promises to deliver real-world artificial intelligence in business processes.

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Kogentix is gearing up to enter the sizzling, but crowded, machine-learning-driven analytics sector using its Automated Machine Learning Platform, or AMP. AMP is designed to use third-party machine-learning libraries and programming languages and Hadoop technologies, including Spark, to provide enterprises with an end-to-end stack, which also includes professional services. Kogentix has also hatched a vertical application game plan for AMP, kicking it off with an analytics app for Internet of Things (IoT), as part of the startup's strategy to operationalize machine learning.

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## THE 451 TAKE

Kogentix has a seasoned management and employees who are well versed in delivering professional services for the Hadoop open source processing framework, which the startup appears to be putting to good use with AMP. We also like the fact the company plans to deliver out-of-the-box analytic apps for AMP because it will further underpin its operationalization slant for machine-learning-driven analytics and provide fresh differentiation, which is important in this packed, cutthroat sector. However, we think the startup could do more to elevate its market profile, which is currently low, particularly since IBM Watson Analytics is a primary rival.

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## CONTEXT

Kogentix was founded by Intel executives with backgrounds in managed services and Hadoop. CEO and co-founder Boyd Davis ran Intel's distribution of Apache Hadoop under a group he formed to expand Intel's business model to software. COO and co-founder Sanjay Gogia headed Intel's big-data professional services team for Hadoop. Gogia joined Intel when the company acquired his former startup, Xtremeinsights, in 2013. Xtremeinsights was also established by Kogentix's other two co-founders Krishna Nimmagadda and Jai Malhotra. Nimmagadda is Kogentix's co-founder and president. Malhotra is co-founder and CTO.

Kogentix isn't an ordinary startup. It is much larger than might be expected for a vendor that was formed in early 2015 and has yet to make a full market splash. The startup has roughly 200 employees and offices in Chicago; Singapore; Pleasanton, California; and Hyderabad, India. About two-thirds of Kogentix's employees are in India, and a third are in the US.

Kogentix already has about a dozen customers, although these accounts have come on board as a consequence of the firm's prior focus as a Hadoop-centric analytics and professional services player. Kogentix announced its so-called next-generation Hadoop-based business application play in September 2015, when the startup also announced Boyd Davis as CEO. The firm's current revenue stream comes from professional services, which it has used to develop AMP, which is currently in beta testing.

## STRATEGY

Kogentix is priming its machine-learning-based analysis offering for practical artificial intelligence (AI) fueled by big data. This tag line is intended to reflect a desire to provide enterprises with a relatively standard set of algorithms for the Hadoop ecosystem, which are delivered inside a business process for true value. Management is of the opinion that successful artificial intelligence isn't about providing companies with exotic algorithms but is about drawing on open source technologies already available and enabling machine-learning-driven analysis to be operationalized, by providing the requisite software and services, in order to surface it in business processes.

Kogentix argues that data collection, transformation and data wrangling are hard, as is translating these data management capabilities into a business workflow in order to operationalize them and gain real value. That's the rationale behind delivering AMP as a software and services play. AMP is a horizontal development stack for creating AI-based apps. That said, Kogentix is also giving it a vertical slant. AMP for IoT is the first deliverable from this vertical strategy, which the startup plans to build out in future. In the longer term, the game plan is to encourage partners and customers to craft apps onto AMP too.

Kogentix will use an enterprise-oriented annual subscription sales model to peddle AMP and AMP for IoT, which is bundled in with it. Pricing will be driven by the size of the Hadoop cluster on which it is deployed, and will start in the low hundreds of thousands of dollars. Kogentix is using a cloud delivery model for AMP, which is currently in private beta, and will enter into production by the end of the first quarter 2017.

## PRODUCT/SERVICE

AMP is designed to be a rapid development platform for building, managing, monitoring and deploying AI-based applications using existing machine-learning libraries and programming languages. Kogentix's core intellectual property is in the realms of data ingestion, data discovery, model development, training, deployment and ongoing monitoring, as well as vertical apps, not algorithms.

The startup intends enterprises to use existing machine learning algorithms of choice, providing a drag-and-drop interface for different types of models, created in R, Python, Scala, H2O, Spark MLlib or in custom algorithms. AMP essentially provides a process for registering, validating and retraining the models created in the third-party environment.

AMP is also designed to enable the user to trace model performance across algorithms and workflows. Monitoring the effectiveness of workflows in production is another capability. In addition, AMP will also optimize the workflow with better algorithms, if required. Machine-learning algorithms aside, Kogentix's open source strategy for AMP also involves the use of Hadoop technologies. AMP employs Spark as a processing engine. It is also optimized for Hadoop's HDFS file system. Kogentix reports that it has a close relationship with Cloudera but can support other Hadoop distributions too. Data doesn't have to be in a Hadoop cluster for AMP to handle it – data can be fed into AMP in a CSV file format.

AMP supports stream processing and batch processing into Hadoop. That said, it can also support other environments such as Amazon S3 for storage. Kogentix has a partnership with Amazon Web Services and is using AWS as a deployment model. AMP is also available on Microsoft Azure as a cloud service. Management also expects some companies to want to deploy AMP as a managed service in their cloud of choice, or as private cloud, or on-premises. Kogentix will support all these deployment models. AMP also provides REST-based integration to push out results to a user interface of choice.

AMP for IoT – as its name indicates – is for Internet of Things-based analysis scenarios. Kogentix has essentially packaged particular capabilities for this type of analysis, so that companies have out-of-the-box features for prescriptive analytics involving failure prediction and anomaly detection. AMP for IoT is designed to support real-time and batch ingestion of device data and on-premises, either on-premises or in the cloud. It also aims to surface visibility and predictions at the system/device level, and the component/subsystem level.

## COMPETITION

Kogentix's enterprise focus – in tandem with the startup's ability to provide consulting services and software as part of its machine-learning-based analysis play – means AMP is likely to be compared with IBM Watson Analytics first. Indeed, management notes that it has already come across Watson Analytics as well as SAS Institute. That figures. SAS is likely to be incumbent in many of the enterprises Kogentix is targeting. We suspect Kogentix's IoT analytics app is likely to elicit comparisons and competition with purveyors of advanced analysis offerings for IoT including Splunk, Anodot and BellaDati.

Kogentix also reminds us of Dataiku, owing to a shared open source approach for machine-learning-driven analytics. Although complementary, we also think H2O may become more directly competitive, given the startup now has a primary commercial offering known as Steam, which is designed to cover some of AMP's same functionality in the area of operationalizing machine learning.

In addition, it is worth noting the distinction between Kogentix's AMP and DataRobot and DMWay Analytics offerings, which are also pitched at automating machine-learning-based analysis. DataRobot and DMWay essentially automate the machine-learning algorithm selection process. Kogentix, in contrast, is focused on the operationalization aspect, arguing that machine-learning-based insights have no value unless deployed into some of type of business application or process.

Last, the machine learning-based analytics arena is crowded, with at least 30 startups in the sector. That said, not many of them provide professional services as part of their go-to-market strategy. We also expect the machine-learning-based analysis sector to heat up further. SAS Institute is a big gun planning to make a more formal market entrance in 2017; SAP and Oracle are also moving in and could provide fresh competition in the enterprise, where Kogentix is focused.

## SWOT ANALYSIS

### STRENGTHS

Kogentix has a pragmatic strategy, which should resonate well with enterprises already using Hadoop that aren't looking for data science tools but instead want data-driven applications underpinned by machine-learning software and services.

### WEAKNESSES

What does it do? Some folk may be confused by what Kogentix has to offer, given the startup announced Hadoop-based business applications in 2015, but has now shifted emphasis to an AI-driven cloud service and apps on an open source stack with AMP.

### OPPORTUNITIES

Upselling to existing customers already using Kogentix professional services seems like low-hanging fruit. Hadoop distributors also appear to be a good sales avenue.

### THREATS

Kogentix is entering into a crowded space, where it will have to jostle for position with fellow startups - and members of the analytics establishment - including primary competitor IBM, which has generated significant buzz for Watson Analytics.