



IMPACT REPORT

# H2O.ai raises \$20m series B to capitalize on rapid open source machine-learning growth

NOVEMBER 12 2015

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Adoption of H2O.ai's open source machine-learning environment for developers and data scientists is growing at a remarkable rate, and paying customer conversion rates are heading in the right direction. The company recently raised a \$20m series B funding round to help expand its support and sales teams to meet anticipated demand and begin to shape a strategy to drive further adoption via applications for non-technical business users.

## The 451 Take

Growth in the adoption of H2O this year has been nothing short of spectacular, and H2O.ai's investment in marketing appears to be paying off already with a slight increase in open source conversion rates. The latest funding round should help further by providing the capital for increased sales, marketing and community engagement, as well as international expansion. Investment in engineering should also help the company accelerate its plans for data-preparation capabilities and domain-specific applications, creating opportunities for revenue generation beyond support services.

## Context

If there's any doubt that machine learning is all the rage, adoption rates for H2O.ai's H2O open source machine-learning environment for predictive analytics should dispel that. The company reported 100 businesses and 400 individuals using H2O in May, and 3,000 businesses and 18,000 individuals in August. Just three months later, those figures have jumped again with H2O.ai citing 5,000 businesses and 35,000 active individual users. Conversion rates are also heading in the right direction. In August, the company reported 27 paying clients, just fewer than 1% of the number of user companies. That conversion rate is now up to 1-2% with H2O.ai adding 25 customers in 2015, including AT&T, Comcast, Kaiser Permanente, McKesson, Walgreens, Capital One, Progressive Casualty Insurance, Transamerica Corp and Zurich Insurance.

The increase in conversion of open source users to paying customers can be partly attributed to H2O.ai's investment in a marketing group, as previously reported (</report-short?entityId=86390>), and the company has announced a \$20m series B funding round to expand sales, marketing and community engagement even further. The funding round was led by Paxion Capital Partners and also involved another new investor, Capital One Growth Ventures, along with existing backers Nexus Venture Partners and Transamerica. Michael Marks, founding partner of Paxion and Walden Riverwood Ventures, who was also involved in the company's \$8.9m series A round, will join H2O.ai's board of directors.

The company's funding to date now totals \$34m and H2O.ai plans to use the new round to expand sales, marketing and community engagement as well as drive international growth – it is currently focused almost exclusively on the US. The company has 55 employees (up from 38 in August), the vast majority of which are in engineering roles.

## Technology

H2O.ai was founded in 2011 as OxDATA to bring machine learning to a combination of developers and data scientists and build a commercial business around its open source (Apache license) machine-learning environment. The company focuses on three key areas:

- Re-implementing algorithms in Java – including generalized linear model (GLM), distributed random forest, gradient boosting machine (GBM), k-means and naïve Bayes – that had been initially designed for mainframe and proprietary systems to enable them to run on distributed cloud environments and emerging data-processing platforms such as Apache Hadoop and Apache Spark.
- Building out a data-preparation environment to simplify and automate the task of preparing data for analysis, which H2O.ai estimates represents approximately 90% of data scientists' time, rather than actually analyzing data.
- Creating a user interface that would automate ETL processes and enable developers and data scientists to deploy H2O independently to implement machine learning – allowing data scientists to create models as plain old Java objects without calling on developers, and developers to use the Flow Web UI to create models without calling on data scientists.

The data-preparation environment remains a work in progress, with development led by Matt Dowle, creator of R's data.table, who joined the firm in March. It is expected to be included in the next major release of H2O. Meanwhile, the company is also continuing its focus on extending H2O to become more of an application design and deployment environment that will enable the creation of what it calls 'smarter applications' targeted at key verticals and use cases. In addition to the core H2O environment, H2O.ai offers Sparkling Water, introduced just over a year ago, which enables the predictive analytic models developed in H2O to take advantage of the Apache Spark in-memory data-processing engine.

## Competition

The Apache Spark project has its own machine-learning library, MLlib, which leads to the common assumption that H2O (and particularly Sparkling Water) competes with commercial Spark supporter Databricks and its cloud platform. While H2O.ai concedes that there are some overlaps, it maintains that the relationship is actually complementary and that it sees many users taking advantage of both. Specifically, the company notes that it doesn't yet support natural language processing, but does offer better support for 'classic' algorithms such as GLM, GBM and distributed random forest. On that basis, we might also expect H2O.ai to claim a complementary relationship with Google's recently open-sourced TensorFlow ([/report-short?entityId=87146](#)) machine-learning library, which is designed specifically for deep learning.

H2O.ai's direct competition includes machine-learning specialists such as Skytree and Dato, while it also vies with cloud-based services like Microsoft's Azure Machine Learning and AWS's Amazon Machine Learning. Additionally, there a variety of vendors offering predictive analytic offerings and services that are driven by machine-learning capabilities, including the likes of SAS, IBM Watson, Adatao, Dataiku, BigML, Wise.io and Yottamine Analytics. H2O.ai claims that this general growth of machine-learning-driven products and services is good for its business, as it means that more analysts are becoming educated about machine learning.

## SWOT Analysis

### Strengths

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H2O.ai is enjoying the benefits of creating an open source, easy-to-use approach to machine learning that appeals to both developers and data scientists.

### Weaknesses

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H2O remains a work in progress, and the data-preparation and domain-specific applications may help the company improve open source conversion rates with further opportunities for revenue generation beyond support services.

### Opportunities

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Its latest funding round should enable H2O.ai to invest in sales and marketing, as well as product development and international expansion.

## Threats

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Machine learning is becoming an integral part of broader advanced analytic portfolios. While this expands the potential addressable market for H2O.ai, it is also likely to pose a greater competitive threat than the company currently acknowledges.

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Research Director

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Figures shown indicate number of transactions

#### COMPANY MENTIONS (PRIMARY)

[H2O.ai \(/search?company=H2O.ai\)](/search?company=H2O.ai)

#### COMPANY MENTIONS (OTHER)

[Adatao](#), [AT&T](#), [Amazon Web Services](#), [BigML](#), [Capital One Bank](#), [Comcast](#), [Databricks](#), [Dataiku](#), [Dato](#), [Google](#), [IBM](#), [Kaiser Permanente](#), [McKesson](#), [Microsoft](#), [Nexus Venture Partners](#), [Paxion Capital Partners](#), [Progressive Casualty Insurance](#), [SAS Institute](#), [Skytree](#), [Transamerica Corp](#), [Walden Riverwood Ventures](#), [Walgreen Co](#), [Wise.io](#), [Yottamine Analytics](#), [Zurich Insurance \(/search?company=Zurich+Insurance\)](#)

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