

REPORT REPRINT

C3.ai moves to provide industry-aware application layer for customer digital transformations

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By John Spooner

The company has increased its focus on use cases and applications that leverage AI to tap device data and business data on an enterprise-wide scale to speed transformations. Its recent product and partner developments aim to make it easier for customers get started, then continue on their own, engaging SIs for support if needed.

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Introduction

C3.ai, previously known as C3 IoT, has grown quickly over the last several years by positioning itself as the software layer for enabling and hastening large enterprise and government digital transformations by combining the functions of an IoT platform, such as data capture and integration, with artificial intelligence (AI), big data and multi-cloud support for merging data into insight. The key to its growth has been enabling customers to apply one platform or one approach to capturing and utilizing all of their data, whether business data or IoT data, using AI and machine learning, across multiple cloud-based or on-premises back ends.

451 TAKE

C3.ai has doubled down on its approach to delivering a kind of mass customization for business customers and their outcomes. The company's toolset helps customers utilize one approach and one platform to attain multiple results across their enterprises, customizing the applications they use as they go. This helps customers tackle the logistical challenges of balancing the technology specifics of implementing and managing a new platform and building applications atop it while still focusing on business needs and business outcomes. Because customers can build or modify C3.ai applications based on needs, relatively easily, they're more likely to utilize it and keep utilizing it. This has led to the company's rapid growth and is likely to help sustain it. The approach is on target with customers' current needs – top IoT platform-purchase drivers include optimizing operations, reducing risk and developing new products, as well as enhancing customer targeting. Challenges outside of security concerns include technology deployment, budget/ROI and difficulties integrating with existing infrastructure – all according to 451 Research's Voice of the Enterprise Internet of Things Budgets and Outlook Report, published in April.

Context

The company is focused on helping customers apply AI-based descriptive, predictive and prescriptive analytics to their business problems, to help them achieve their outcomes more quickly. Its most recent efforts to enhance that process have included updates to its software, aimed at making its platform easier to use, and enlisting additional support for those customers that choose to take advantage of it, in the form of alliances with Baker Hughes, in oil & gas, as well as a global group of systems integrators versed in data science and a range of industries. The company also now provides a broader array of prebuilt capabilities, from connectors that shunt data into the platform to industry-specific starter kits to help customers get to work more quickly. Finally, in order to set off on the right foot with prospective customers, who often associate an IoT moniker with enabling IoT devices and device management, it enacted a 2018 name change. Now C3.ai, the company no longer calls itself C3 IoT.

Founded in 2009 by CRM pioneer Thomas Siebel, the company has raised an estimated \$230m over six rounds, the most recent being a \$100m equity investment in January 2018 from investors including Texas Pacific Group. However, no further funding is expected.

Financial

Since we last covered C3.ai, in August 2018, the company has grown significantly by adding nearly 100 employees and doubling revenue, thanks to significant growth in overall bookings driven by an increasing number of customers, now up to more than 60. We estimate its headcount at the end of 2019 will exceed 500, from an estimated 250 employees in August 2018. We expect the Redwood City, California-based company, which we estimated at \$50m-100m in August 2018, to exceed \$200m by the end of 2019.

Strategic vision and business drivers

Because C3.ai views itself as a software provider, it focuses on driving platform usage rather than solution-building or consulting, although it technically does all three to help customers get up and running on its platform. The software perspective certainly plays into its strategic vision, as well. The company sees the largest opportunity in customers that use its platform across their businesses, creating their own de facto standard. The bulk of C3.ai's business still originates from teaching in-house transformation teams (many of which have tried and failed to make a go of it on their own) how to use its platforms, applications and starter kits. C3.ai provides a great deal of help to customers in the process, often becoming an extension of their digital transformation teams. The company invests in training those customers on how to utilize the platform to create a unified data image across their respective functions, as well to 'write' their own applications, assembling functionalities needed in the platform to serve specific outcomes. Helping onboard and enabling customers to use the platform and tools, rather than doing that work for them like a systems integrator (SI), drives platform usage and encourages customers to actively move from one to multiple use cases and applications, according to C3.ai. The multiplication effect, of course, increases the company's bookings.

Products and technology

C3.ai's most recent efforts have been to increase the ease with which customers can utilize it to build new applications and access more data. The C3.ai AI Suite for Digital Transformation, whose predecessor was the C3 Type System, uses a model-driven architecture to create a data-abstraction layer – still a rarity among IoT platforms – that models all elements within a system, defining the parts or objects within it using metadata. Because the C3 AI Suite is designed to interface with other data and others' tools and applications, versus replacing them, it supports a range of development and data-manipulation tools to allow developers and data scientists to use what's familiar. C3.ai-based data models are accessed and manipulated via interfaces ranging from RESTful to C3.ai's own Ex Machina visual machine learning tool for analytics. Application developers can use an Eclipse IDE plug-in in addition to C3.ai visual-based tools through its Integrated Development Studio offering.

Data science tools, such as Jupyter Notebook, can also be used, and data scientists can leverage existing machine learning frameworks like TensorFlow and Spark MLlib, in addition to offering enterprise platform services and microservices related to access control, security and data processing, among other things. The C3.ai offering also includes hundreds of data connectors to AWS, Confluent, HDInsight and IBM MQ, the company says, as well as third-party application access via OAuth 2.0 and single sign-on and two-factor authentication via SAML 2.0.

C3.ai addresses business use cases and applications by building outward from its platform, which comes with predefined types or features, ranging from predictive maintenance to fraud prevention, allowing customers to tap them. These can be mixed and matched with industry-specific starter kits that contain predefined oil & gas equipment metadata, for example. C3.ai starter kits adhere to technical standards for the industries they address, such as CIM for utilities and PPDM for oil & gas, but allow customers to customize them to their own needs, as well.

Customers

C3.ai's top markets include energy and manufacturing, defense and financial services, followed by healthcare and smart cities, where it has a smaller but increasing presence. The company has numerous brand-name clients, including 3M in manufacturing and Shell in oil & gas. It also counts ENGIE, Consolidated Edison, Duke Energy and the New York Power Authority among its customers in the utilities market. Many of them utilize C3.ai's platform to gain better visibility into their operations, whether supply chain, equipment uptime and maintenance, or financial transactions. The US Air Force, a defense customer, utilizes C3.ai for predictive maintenance to help increase aircraft availability and readiness across its fleet. Industrial and manufacturing customers typically use the offering for inventory control, predictive maintenance and energy management.

Partners

C3.ai announced a joint venture with Baker Hughes in late June, under which the oil & gas company will utilize C3.ai oil & gas industry applications, to start, while ultimately creating a line of jointly developed oil & gas industry-focused AI-based SaaS applications. These will target production management, asset performance management, safety, security, and environmental impact across upstream, midstream and downstream aspects of the oil & gas segment. The companies will also conduct joint sales and marketing activities, allowing Baker Hughes' 12,000 sellers to promote C3.ai software. Giving a nod to customers that need additional assistance, the company has launched the C3.ai Partner Program, by which it's certifying numerous SI partners to help implement and create applications on top of the C3.ai platform. The program currently includes about a dozen medium-size SIs focused on AI and data science, including BGP and Clarity Insights, as well as CGI. The program builds upon prior C3.ai technology and sales partnerships with AWS, Microsoft Azure and Google Cloud.

Competition

C3.ai generally accepts the concept of multi-vendor, multi-cloud digital transformations, aiming to work with nearly any IoT platform and draw data from business systems, such as CRM. Yet it still faces two types of competitors: do-it-yourself efforts, created in-house by merging various IoT/cloud services with custom code, and all-inclusive AI and application suites, such as IBM's Watson IoT and Siemens' MindSphere. Watson IoT's AI capabilities and set of business-oriented applications, like Maximo, combine IoT, AI and applications for industries. Siemens' MindSphere, also focuses on customer outcomes.

SWOT Analysis

STRENGTHS

C3.ai's focus on providing a standardized platform and enabling customers to use it broadly, and extend it, is still fairly unique in a market where consultants and SIs sometimes look at each new application as a new engagement or project.

WEAKNESSES

C3.ai's third name change in approximately three years may have customers questioning what it will focus on next. However, it also reflects the company's evolution from C3 Energy, to C3 IoT to C3.ai.

OPPORTUNITIES

C3.ai can partner with SIs and consultancies to package the C3.ai platform into strategic digital transformation efforts, which get the company in on the ground floor and help guarantee annuity-style revenue streams.

THREATS

Over time, cloud-scale platform providers like AWS, Azure and Google Cloud all increase the ease of use and AI capabilities of their platforms, edging out the need for more horizontal platforms such as C3.ai's. This is mitigated by diving deeper into vertical markets.