WINNING AT DATA SCIENCE: HOW TEAMWORK LEADS TO VICTORY

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Presents a study on the state of Open Data Science in the enterprise

BIG DATA....

...best defined as extremely large data sets that may be analyzed computationally to reveal patterns, trends and associations, in everything ranging from human behavior to scientific research to sensor data, has grown exponentially since the early 1990s. **The increase in Big Data collection has forced enterprises to capitalize on these massive data stores to drive new value to their organizations.** Data science has emerged as the answer to the Big Data riddle, empowering organizations of all sizes to make this data more actionable, deriving new insights that improve operations, enhance customer experiences and boost the bottom line. Data science is a rainmaker, helping organizations innovate faster, thwart competitive threats and readily anticipate market changes.

With our inaugural study on the state of Open Data Science in the enterprise, Anaconda Powered By Continuum Analytics looks to highlight the drivers of data science in the enterprise, uncover the challenges around adoption and discuss the teamwork required for its continued success.

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Survey methodology described on page 11

DATA SCIENCE IN THE ENTERPRISE FOR THE WIN

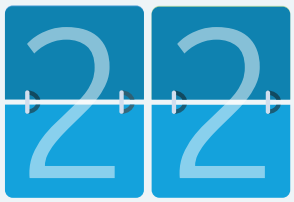
True to the introduction of any new enterprise tool, data science's path to the big leagues required practice, further development and maturity to get to where it is today. The simplification of the technology and a hearty appetite for advanced analytics that go well beyond simple prediction have driven the use of data science across the enterprise. The next step in the evolution of data science is **broader adoption among the enterprise C-suite;** they must realize the value of applying data science to their business and how to leverage results for a competitive advantage. The true value gleaned from data is proven when it is put to work and acted upon—with a goal of increased success across the enterprise.

Research finds that some organizations are playing ball; they do understand the incredible impact data science has on the enterprise even if they're still not quite sure how to execute for maximum results. Eighty-nine percent of companies have at least one data scientist, but less than half (49 percent) have a data science team. It's time for enterprise leaders to acknowledge that there's no "i" in team and move beyond baby steps to build a successful data science team.

DATA SCIENCE TEAMS IN THE ENTERPRISE

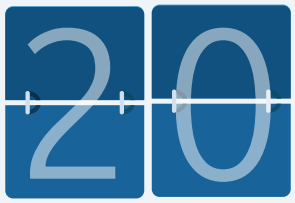
PERCENT

"We have a data science team"



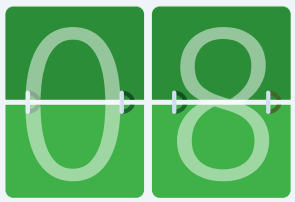
PERCENT

"We have several data scientists but they do not operate as a team"



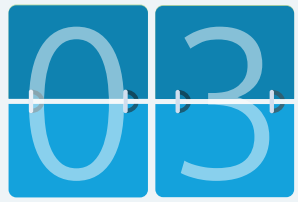
PERCENT

"We have one data scientist"



PERCENT

"We do not have any data scientists at our company, but we are planning to employ one"



PERCENT

"We do not have any data scientists at our company and are not planning to employ any"

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DATA SCIENCE IS KEY TO TAKING THE LEAD

Data science in the enterprise is gaining momentum: nearly all respondents—96 percent—agree that data science is critical to the success of their business. Sixty-two percent report that data science is used at least on a weekly basis and 31 percent use it daily, proving that there's still room for improvement. The good news is that three-quarters (73 percent) rank it as one of the top three most valuable technologies they use. Thirty-two percent believe data science is the technology that wins 'Most Valuable Player,' saying it provides the most value to their organization.

HOW OFTEN DATA SCIENCE IS USED IN ORGANIZATIONS

1% Never / Don't know

4% Once per year

9% A few times per year

24% Monthly

31% Weekly

31% Daily

It's clear that the business community is motivated by the insights and actions that data science enables; just 11 percent prefer Big Data environments, like Hadoop and NoSQL, and three percent believe data warehouses, like Oracle, are the technologies that add the most value to their organization. These numbers reinforce the fact that we're moving past simply storing data and are now motivated to dig in and find ways to act on it. In fact, nearly half (45 percent) of organizations claim that data science has yielded greater results than expected.

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Conflict:

DATA SCIENCE IS TOP SEEDED
SO WHY IS IT OFTEN BENCHED?

The criticality of data science in the enterprise is uncontested: 96 percent agree that it's a driver for success, but 22 percent report that their teams are stuck in the minor leagues, failing to make full use of the data available. The effort is there but some coaching, development and teamwork is needed. The good news is that 40 percent of organizations are setting the pace—responding that their organizations are making full use of the data that is mined and available.

Despite the clear benefits offered by data science and the fact that almost all respondents report that their organization is using data science at least occasionally, there are still 14 percent of organizations that either use data science very minimally (a few times per year) or not at all. Why is this? The top three barriers to adoption include executive teams that are satisfied with the status quo (38 percent), struggling to calculate ROI (27 percent) and budgetary restrictions (24 percent).

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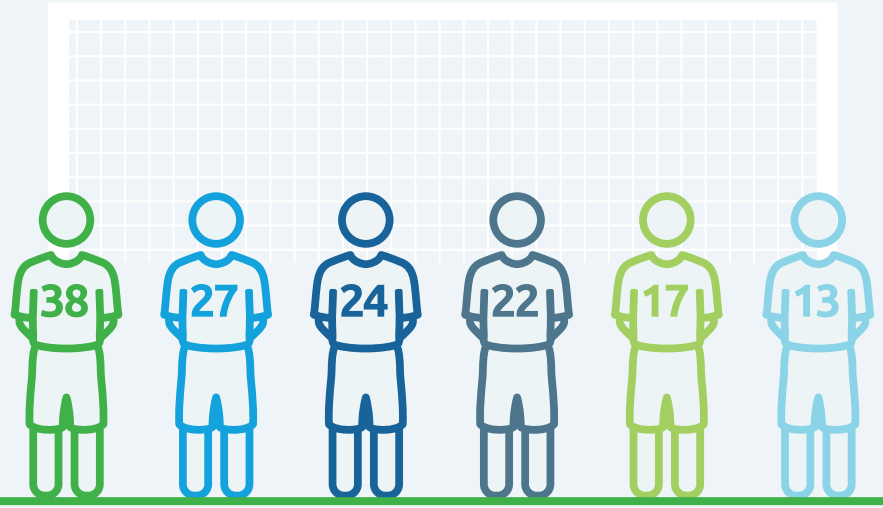
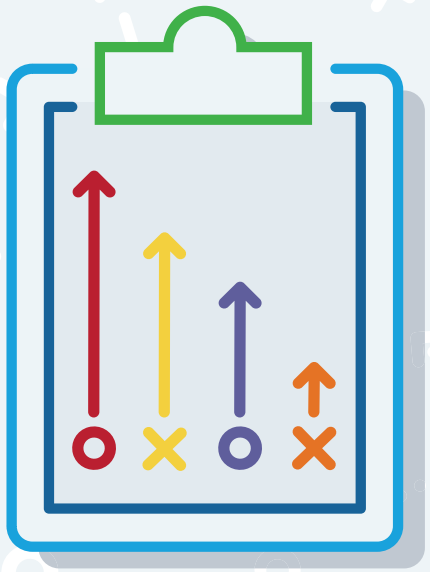
BARRIERS TO ADOPTION



- **38%** Happy with status quo
- **27%** Difficult to calculate ROI
- **24%** Don't have the budget
- **22%** Too hard to implement
- **17%** Don't have the right team
- **13%** Most of the organization would not make full use of the results

UNDERSTANDING THE DATA SCIENCE PLAYBOOK

While this third-party survey focused on business and IT managements levels, it is also important to gather perspectives from the data scientists themselves. A survey of more than 500 data scientists revealed the similarities and disparities between business management and the people in the data science trenches.



MATURITY OF DATA SCIENCE ACCORDING TO C-LEVEL & IT MANAGERS

40% Teen - our processes are maturing, but significant improvements can still be made
30% Adult - we are experienced in making full use of the data that is available to us
22% Toddler - we have made some initial steps, but have a long way to go
9% Infancy - we have barely started, if at all

Both management and data scientists believe in the power of data science, with 96 percent of data scientists agreeing that data science is critical to the success of their business, compared to 97 percent of C-level and IT managers who feel the same. However, while these groups may agree on the impact of data science, they do not see eye-to-eye when it comes to their company's data science lifecycle. Data scientists are more conservative when it comes to their organization's phase in its data science journey, with the majority of respondents (45 percent) citing that they are still in the "toddler" stage and have a long way to go. By contrast, only 22 percent of management level felt their company was in the toddler stage. The most popular response (40 percent) among management level was that their company was at the "teen" stage, but there is still room for improvement. Only 24 percent of data scientists felt the same way.

This data highlights the fact that there is more potential in data science than C-level and IT managers realize and that more communication between data scientists and management levels will benefit most organizations.

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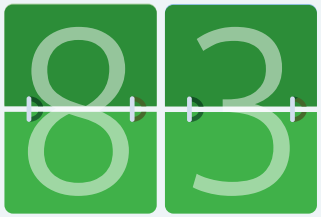
TEAMS FOCUSED ON DATA SCIENCE INSIGHTS

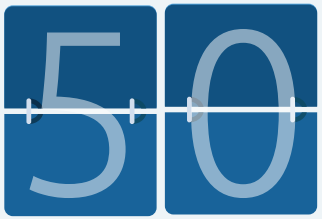


PERCENT

Operational teams

PERCENT

Executive team



PERCENT

Front line personnel

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Implementing the Technology: WHICH TEAMS ARE FOCUSED ON INSIGHTS?

Data science is no longer a backroom activity accessible and understandable only to the techiest analysts. The newly unearthed and analyzed data is transforming industries. Findings show that financial, business and professional services are most likely to utilize data science regularly, with respondents who work in these sectors reporting that data science is used 14 times per month, on average.

Entire organizations benefit from harnessing data science and exploiting the findings. While the need for data science teams within the enterprise remains an issue, results find that organizations making full use of data science are more likely to report that their executive team and front line personnel make up the bulk of those using data science (88 percent and 60 percent, respectively), likely due to new technology tools. In addition, data science is powering the wheels that propel organizations forward, with more than three quarters of respondents whose organizations employ data scientists saying that operational teams (83 percent) and executive teams (76 percent) use the results that are generated by data scientists. Once the C-suite adds a technology to its roster of enterprise tools, adoption across the board accelerates, creating solutions to existing problems and uncovering new opportunities. The end zone is now in sight.

CURVEBALLS FACING THE ENTERPRISE

According to management consulting firm, McKinsey, there is a global shortage of data scientists, with a talent gap in the U.S. of up to 190,000 workers. This may be due to the fact that data science adoption is growing faster than people with the skills to execute the role.

Ninety-six percent agree that data science is necessary for the success of their business, however:

- Nearly all respondents—97 percent—report that data science is challenging in some way including:
  - Access to the proper tools or technology (63%)
  - Lack of skilled talent (56%)
  - Data quality (50%)
- Only 3 in 10 (30%) feel that their organization is making full use of the data that is available

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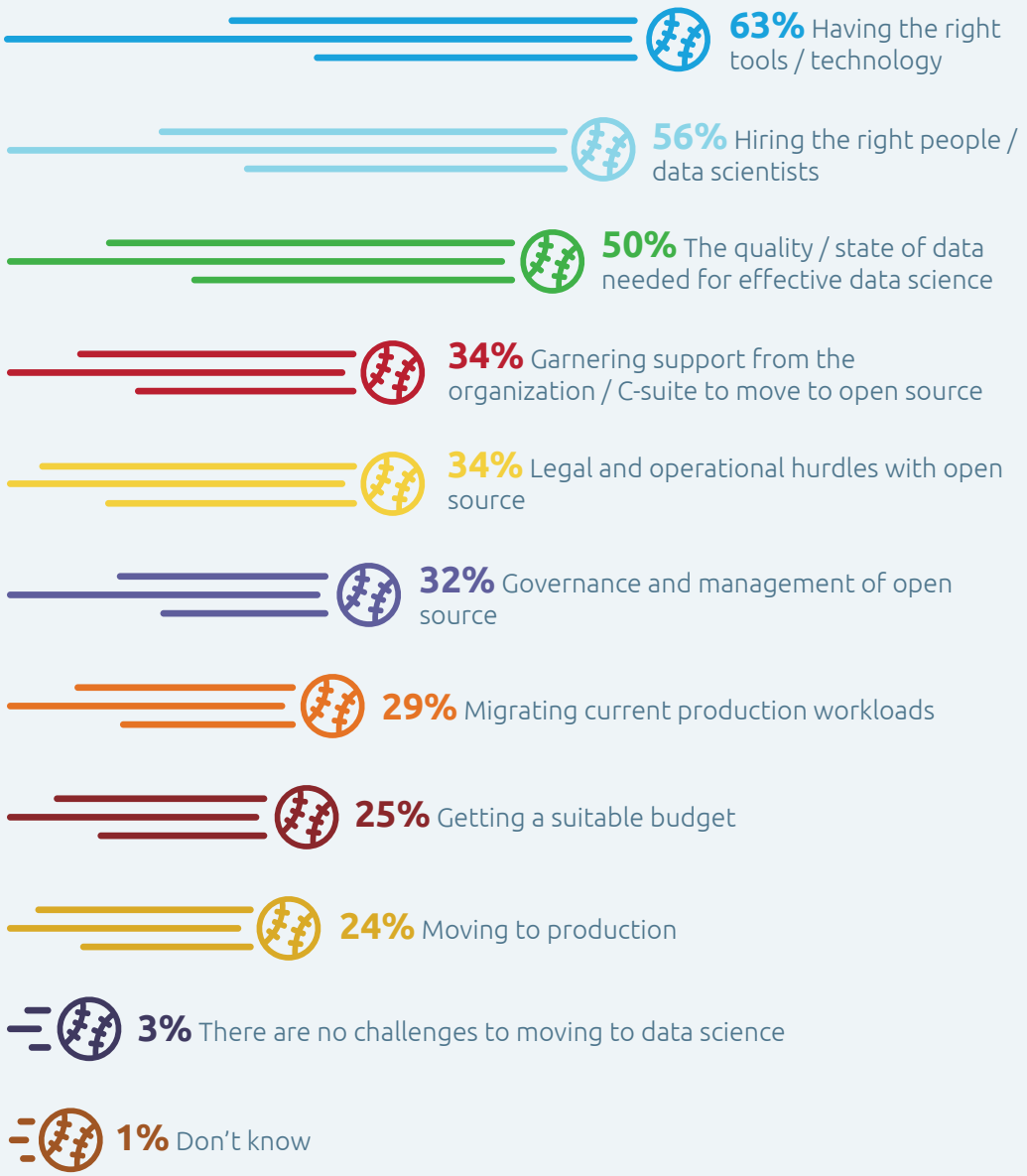
CHALLENGES FACED BY ENTERPRISES

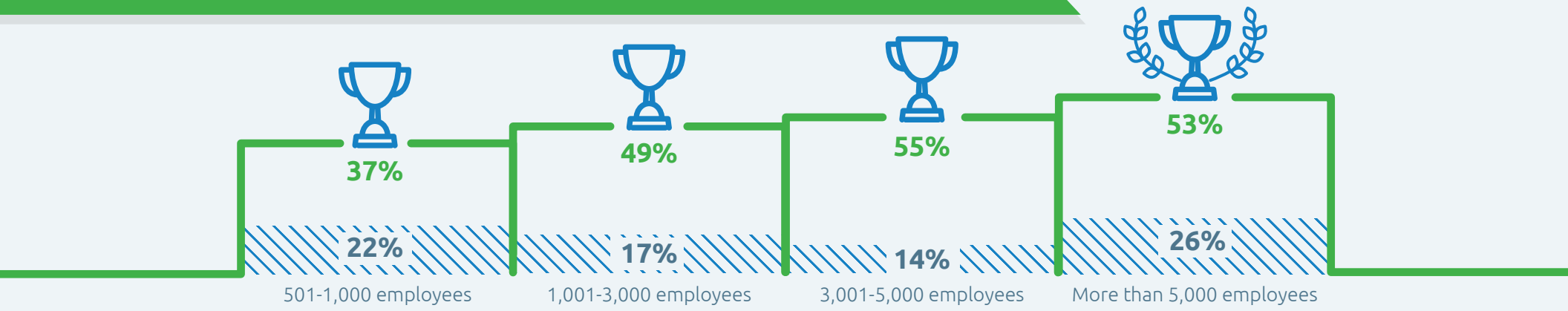


OPEN DATA SCIENCE TEAMWORK FOR THE GOLD

Though challenges persist, there's little doubt that we're living in an increasingly data-driven world. There's also little doubt that this evolution calls for a data science team in the enterprise, versus just one person or disparate data scientists. Just 49 percent of respondents report that a data science team is in place within their organizations and 53 percent of these teams are in large companies with more than 5000 employees. Much like special teams in football, forming and empowering data science teams can be the rainmaker for your organization. No matter the size of the company, data science teamwork is critical for organizations tasked with extracting insight from information assets for Big Data initiatives, as this requires a broad combination of skills best tackled by a team.

Collaboration is key: 69 percent associate Open Data Science with collaboration; the majority of respondents regard Open Data Science as a cooperative method of analysis. However, less than half of respondents (49 percent) practice what they preach, leaving plenty of room for improvement.

CORRELATION BETWEEN DATA SCIENCE TEAMS, COLLABORATION & COMPANY SIZE



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A WINNING STRATEGY

Data Science is not a passing trend—it is the key to unlocking critical enterprise secrets—but how do companies lagging behind catch up to harness the power of data?

The consumerization of IT is at the helm of the Open Data Science revolution, finally breaking open the previously secret world of data and analytics. With Open Data Science, data is readily accessible, empowering every person to participate and interact with it. This new landscape, comprised of a combination of advanced analytics (machine learning, deep learning, AI), high-performance computing (Big Data, distributed systems) and interactive applications (interactive dashboards/visualizations), makes up Open Data Science platforms, representing the new world order of data science.

Thanks to Open Data Science, teams in the enterprise have complete access to data—even without the knowledge of complicated languages—enabling them to self-service, collect, analyze and act on data, mobilizing them to solve complex problems.

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METHODOLOGY

The Open Data Science Survey is based on an online, quantitative market research study commissioned by Continuum Analytics and conducted by Vanson Bourne. Respondents included 200 data science and analytics decision makers at U.S. organizations in September-October 2016. Respondents came from organizations of all sizes and a variety of industries, including telecommunications, retail, constructions, manufacturing, financial and entertainment services, to name a few.

ABOUT ANACONDA BY CONTINUUM ANALYTICS

Anaconda is the leading Open Data Science platform powered by Python, the fastest growing data science language with more than 13 million downloads to date. Continuum Analytics is the creator and driving force behind Anaconda, empowering leading businesses across industries worldwide with solutions to identify patterns in data, uncover key insights and transform data into a goldmine of intelligence to solve the world's most challenging problems. Anaconda puts superpowers into the hands of people who are changing the world. Learn more at continuum.io.