



EXECUTIVE OVERVIEW

2016 Trends in Data Platforms and Analytics

PREVIEW

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The pace of disruption in the data platforms and analytics space may be relatively slow, as we have noted before, but there is no doubt that the sector is in a state of flux. The developments expected to make an impact in 2016 all involve gathering momentum behind technologies and trends that could deliver real lasting change when it comes to generated business intelligence from data.



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Key Findings

451 Research estimates that revenue generated by event/stream processing vendors will grow at a CAGR of 29% from \$383m in 2014 to reach \$1.37bn in 2019.

Preliminary data indicates that advanced analytics represented 36% of total reporting and analytics revenue in 2014, with predictive analytics/other representing 33% of the total, and machine learning the remaining 3%.

Executive Summary

INTRODUCTION

Last year we took a somewhat pessimistic view of the pace of disruption in the data platforms and analytics sector. Not negative, per se, but certainly a glass-half-empty perspective, as illustrated by the subtitle of *last year's 451 Research Preview*, 'More of the Same – Only Less So.' While we still anticipate a very slow rate of disruption in the data platforms and analytics market, and we believe the market will remain dominated by large incumbent vendors (Oracle, IBM, Microsoft, SAP), we are taking a more positive perspective this year. Not optimistic, per se, but certainly glass-half-full.

The reason for that is the common thread that ties together the five trends we identify below – gathering momentum behind tools, technologies and approaches that are the result of innovation from startup vendors and incumbents alike and that will drive lasting change among enterprises that embrace them in order to deliver business intelligence from data.

Those five trends are: the accelerating adoption of stream processing; the maturation of predictive analytics; a new phase of strategic adoption for self-service data preparation; Hadoop vendors and users getting serious about data governance; and the continued blurring of the lines between transactional and analytics databases driven by in-memory processing. None of these trends are brand new, and none of them will truly disrupt the market in 2016, but all of them are indicative of the very real changes that are happening within enterprises as they look to take advantage of the opportunities for generating business intelligence.

Take the accelerated adoption of stream processing for example. Event/stream processing has been around for many years, but is now seeing increasing take-up outside early adopter markets (financial services) as more companies look to increase their rate of analysis in order to improve the speed at which they can make business decisions and respond to change.

The velocity of data (the rate at which it is produced) has long been accepted as key aspect of 'big data,' and the rise of the Internet of Things (IoT) is driving more enterprises to consider how they can take advantage of data produced by sensors and other data-generating machines. However, as we noted as long ago as 2011 with our Total Data report, frequency of analysis (the rate at which data is queried by the business) is also a key consideration that is driving change not just in terms of the amount of data that is available for businesses to analyze, but also the way in which they want to analyze it.

Stream processing technologies enable enterprises to act on 'fast data.' Predictive analytics tools and techniques enable the business to not only react to this data, but proactively anticipate changing circumstances in order to remain competitive. Again, predictive analytics is in no way new, but it is being more widely adopted, to the extent that many enterprises now expect to take advantage of predictive analytics in their decision-making process.

There is still some way to go – predictive analytics is still the realm of statisticians, mathematicians, data scientists and other highly technical individuals – but we increasingly see enterprises embedding the results of predictive analytics and machine learning in applications and tools that are used by less skilled, but potentially more business-savvy, decision-makers.

As we note below, ensuring that the right data is used to give these decision-makers true insight is essential, and pre-processing (and ETL tools) is an important aspect of preparing data for advanced analytics. Our third trend concerns a new phase of strategic adoption for these self-service data preparation tools, which were initially brought to market by startups such as Paxata, Trifacta and Tamr. The incumbent players – including IBM, Informatica and Microsoft – now have self-service data preparation tools of their own, and as self-service data preparation enters the mainstream the interesting question is how enterprises and vendors will balance traditional IT-oriented data integration and cleansing needs with the DIY requirements of other classes of users.

2016 TRENDS IN DATA PLATFORMS AND ANALYTICS

There is some overlap here with our fourth trend – vendors and users getting serious about data governance and Hadoop. The data preparation tools noted above have some governance capabilities that can be brought to bear on data stored in Hadoop, with the self-service aspect a natural fit with Hadoop's schema-on-read approach. The Hadoop vendors themselves are also getting more serious about data governance as it relates to Hadoop, driven by the need to incorporate more traditional data management capabilities as Hadoop is increasingly positioned as the basis of a 'data lake' accessed by different users, applications and groups using different tools for different purposes.

We have been tracking our final trend, the blurring of the lines between transactional and analytic databases, for some time, but it appears to be accelerating. Relational database products that could be used to support transactional or analytic workloads have been common for many years, but we are talking here about databases that take advantage of in-memory performance and processor improvements to support both transactional and analytic workloads at the same time. These combined operational and analytic processing workloads are significant from our perspective as they may also represent the use case that triggers wider adoption of NewSQL database products.

This report presents the trends we see shaping data platforms and analytics in the coming year.

451 Research's 2016 Data Platforms and Analytics Trends

Source: 451 Research, 2015

	Winners	Losers
Stream Processing Adoption Will Accelerate as Companies Grapple with Fast Data	Streaming vendors that have a good list of reference customers and can describe their potential role effectively; enterprises that have begun to investigate the role streaming technology has to play in their organization	Vendors that have limited alerting and visualization technologies; enterprises that see stream processing as a silver bullet to solve all of their data processing challenges
Predictive Analytics Will Continue To Mature and Become a Mainstream, Core Offering	Vendors that identify use cases, scenarios, even verticals in which predictive analytics can be deployed; those that put a strong emphasis on usability	Vendors that fail to consider the complexities of predictive analytics; those that fail to spend to drive market adoption and awareness
Self-Service Data Preparation Will Enter a New Phase of Strategic Adoption	Companies that have already planted a stake in the self-service data preparation ground with requisite functionality; vendors that serve up DIY capabilities to help users in marketing and other line-of-business roles	Vendors that don't take into consideration the need to provide at least a basic level of data access, transformation, profiling and cleansing; players that don't recognize the often separate and distinct needs of IT, data scientists/analysts and business users when it comes to data management
Hadoop Vendors – and Users – Will Get Serious About Data Governance	Existing Hadoop distributors; Hadoop-focused data governance specialists that could become acquisition targets; existing data governance, data quality and data management vendors	Enterprises that have rushed into building data lakes; established data warehousing providers
The Lines Will Continue To Blur Between Operational and Analytical Databases	Pure in-memory database vendors and the incumbent vendors that have added in-memory accelerators to their transactional databases; enterprises that consider the impact on skills that will be required going forward	Vendors that make overzealous claims about the potential to run transactional and analytical workloads on the same platform; enterprises that fail to consider the implications from a skills and organizational perspective

METHODOLOGY

Reports such as this one represent a holistic perspective on key emerging markets in the enterprise IT space. These markets evolve quickly, though, so 451 Research offers additional services that provide critical marketplace updates. These updated reports and perspectives are presented on a daily basis via the company's core intelligence service, 451 Research Market Insight. Forward-looking M&A analysis and perspectives on strategic acquisitions and the liquidity environment for technology companies are also updated regularly via Market Insight, which is backed by the industry-leading 451 Research M&A KnowledgeBase.

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Beyond that, 451 Research has a robust set of quantitative insights covered in products such as ChangeWave, Voice of the Enterprise, Market Monitor, the M&A KnowledgeBase and the Datacenter KnowledgeBase. All of these 451 Research services, which are accessible via the Web, provide critical and timely analysis specifically focused on the business of enterprise IT innovation.

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