FINAL REPORT:
Secondary Research
LATE STAGE COMPANY

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iviota

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VIVIOTA

Viviota set out in 2016[1] to solve critical engineering data analysis problems. The software they have developed integrates powerful analytics software to dramatically simplify data management complexity into existing designs, simulations, prototyping, and test environments. It has worked to decrease the time-to-market for new vehicles, air- and spacecraft, advanced medical devices and semiconductors by segmenting the data so it is easier to digest. They provide services for different engineering industries, including automotive, aerospace and defense, advanced medical devices, and semiconductors[2]. In addition, they have partnerships with several companies, so the partnership sales/revenue may be separated from their own software products[3]. Viviota has two products providing several services. The services included in these two products are listed below:

Time-to-Insight Software Suite

This is an analytics and data management software for the engineering industry. This software suite can help to transform engineering data into actionable knowledge. The software also allows companies an easier way of delivering this information to others. Many useful functions and tools are integrated into this software. Specifically, there are three modules in this suite:

- DataPrep cleanses and enriches the raw data
- DataLook provides search engine functionality
- DataCrunch accelerates analysis[4].

measX X-Crash:

This is an analysis system for vehicle safety tests. For automobile manufacturers, suppliers and crash laboratories, this system can help them conduct tests and efficiently analyze the results according to current laws and standards.

To sum up, Viviota bridges the gap in engineering data analysis. They offer powerful and easy-to-use analytical system to customers in different engineering industries.

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[1] http://docs.wixstatic.com/ugd/c1defd_396a03e4b5f9466d99167828a0c77adc.pdf
[2] https://viviota.com/solutions/
[3] https://viviota.com/partners/
[4] https://viviota.com/wp-content/uploads/2019/08/Time-to-Insight-Software-Suite.pdf

MARKET

Market History

According to the services provided by Viviota, we decided they fit best in the data analytics market.

The data analytics market is growing at a fast pace and, as such, is becoming more competitive. The market is being driven by people at the executive level in organizations. Many companies are looking into digital transformation for their services, hence leads to the growth in this market.

As shown in the graph, the Data Analytics Outsourcing market revenue in the United States was $2.86bn in 2014 and increased to $5.95bn in 2018. It's further expected to grow in the following years.[5]

Data analytics outsourcing market revenue in the United States from 2014 to 2025 (in million U.S. dollars)

Sources
Grand View Research; Statista estimates
© Statista 2019

Additional Information:
United States; 2014 to 2018

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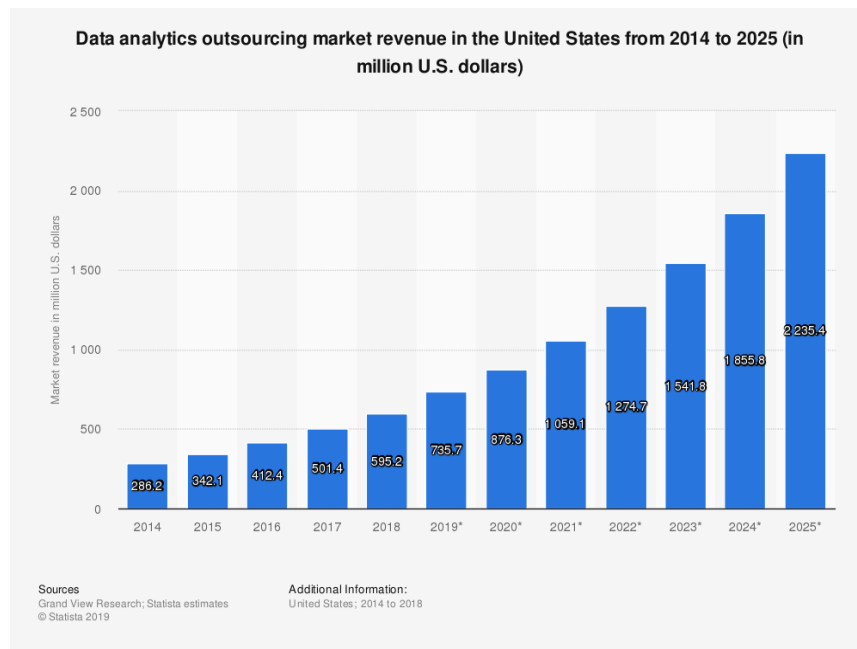
[5] Statista, Data analytics outsourcing market revenue in US from 2014 to 2025, Dec2018

Market Size and Segmentation

According to International Data Corporation (IDC), the worldwide revenue of Big Data and Business Analytics (BDA) market are forecast to reach $189.1bn in 2019.[6]

In addition, the revenues of BDA-related software is expected to be $67.2bn in 2019, with end-user query, reporting, and analysis tools (20%, $13.6bn) and relational data warehouse management tools (18%, $12.1bn).

In the Big Data and Business Analytics industry, the market can be segmented by different services. The 3 largest categories in 2019 are IT services ($77.5bn), hardware purchases ($23.7bn) and business services ($20.7bn).[7]

Below is an illustration of the market segmentation of global IT spending. The market segments related to data analytics service such as infrastructure software and services, can expect their Compound Annual Gross Rate (CAGR) and Year-Over-Year (YoY) to grow in the future.[8]

Exhibit 4: Gartner's forecast for Global IT spending by market segment; CAGR, 2017A–2022E
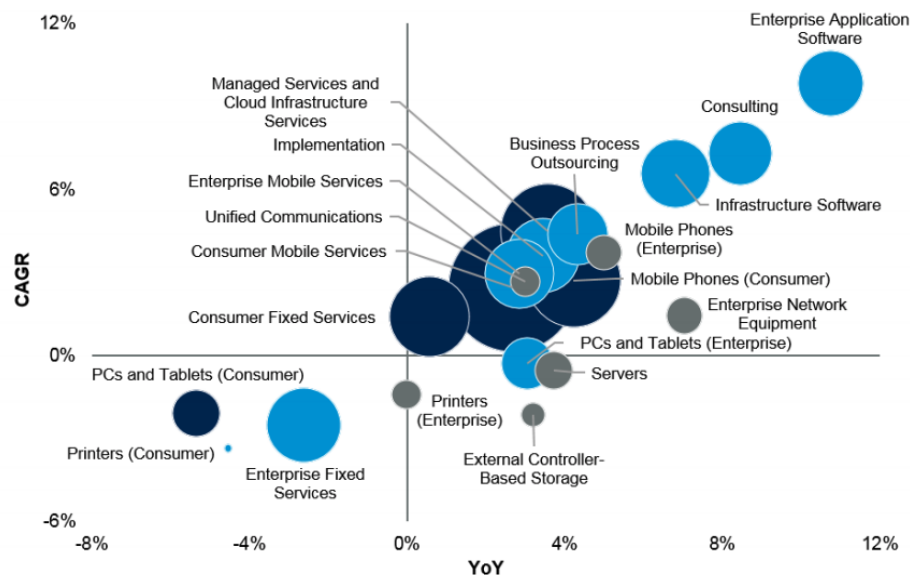
Source: Gartner, "Forecast Analysis: IT Spending, Worldwide, 3Q18 Update" by John-David Lovelock, Adrian O'Connell, Wm. L. Hahn, April Adams, Dean Blackmore, Ranjit Atwal, Hai Swinehart, Neha Gupta

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[6] IDC, Big Data and Business Analytics Solutions Revenue Forecast, 04Apr2019
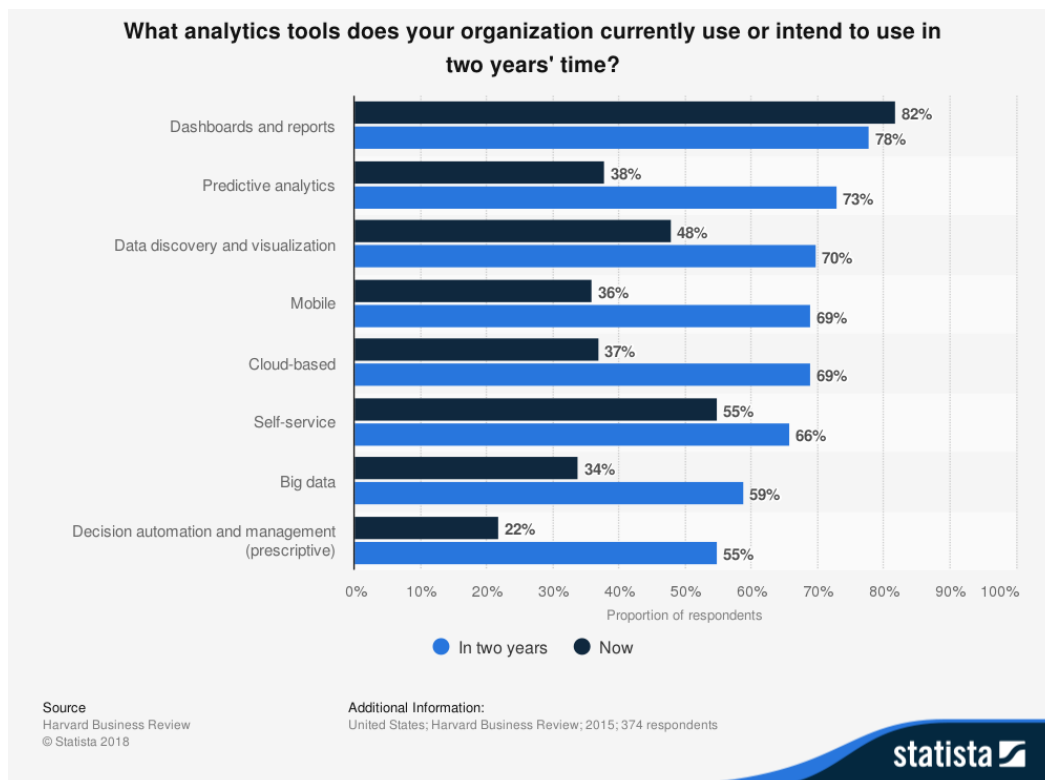[7] IDC, Big Data and Business Analytics Solutions Revenue Forecast, 04Apr2019
[8] RBC Capital Markets, 2019 Software Outlook, 04Jan2019 (p4-5)

What's more, we went deeper to investigate the market segmentation of data processing. As listed below, data processing in the U.S. can be broken into more subcategories, including data entry and processing services.[9]

SUB-INDUSTRIES — 2019 INDUSTRY ESTIMATES

	Cate-gory*	Total Establishments	Total Sales ($M)	Total Employment
Data processing and preparation	Major1	6,862	46,364.9	121,787
Computer processing services	Minor1	563	668.8	21,717
Calculating service (computer)	Minor2	81	87.9	1,061
Computer graphics service	Minor2	22,579	10,832.3	78,169
Computer time-sharing	Minor2	118	110.2	1,928
Service bureau, computer	Minor2	345	342.5	6,301
Data entry service	Minor2	873	5,470.8	15,180
Data processing service	Minor2	3,729	89,123.2	197,808
Data verification service	Minor2	173	528.1	2,345
Keypunch service	Minor2	34	53.1	488
Optical scanning data service	Minor2	320	341.5	3,311
Tabulating service	Minor2	18	66.1	651

Also, this bar graph demonstrates different kinds of analytics tools are currently used in business.[10]

What analytics tools does your organization currently use or intend to use in two years' time?

	Now	In two years
Dashboards and reports	82%	78%
Predictive analytics	38%	73%
Data discovery and visualization	48%	70%
Mobile	36%	69%
Cloud-based	37%	69%
Self-service	55%	66%
Big data	34%	59%
Decision automation and management (prescriptive)	22%	55%

Proportion of respondents

● In two years   ● Now

Source
Harvard Business Review
© Statista 2018

Additional Information:
United States; Harvard Business Review; 2015; 374 respondents

statista

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[9] Mergent Online, 2019 Worldwide Data Processing Services Industry-Industry & Market Report (p131)
[10] Harvard Business Review, Analytics tools your organization currently use in 2 years, 01Dec2015

Market Players

In this market, the top 3 players are Oracle Corporation (21.71%), SAP SE (17.27%), and First Data Corporation (6.29%).[11]

For the big data analytics industry, up and coming companies include Amazon (Web Services), Google (Cloud Platform), and Microsoft (Azure) as they have their provide better platform integration across the technology stack—supporting a multitude of use cases.[12]

[11] The Business Research Company, Business Analytics And Enterprise Software Investment Competitor, Oct 2019
[12] Wells Fargo Securities, LLC, CLDR: Hadoop Is Dead. Long Live Hadoop/Spark (HARK)!, 22Jan2019

Market Forecast

Each industry mentioned an increase in regulations in recent years. This increase in regulations has led to an increase in the demand for thorough and correct testing. A software like Viviota could provide substantial aid to the customers when it comes to processing the data they collect during testing.

The market appears to be growing in most countries, with the US market projected to grow at the global average of 3.2% next year. No boom/bust forecasted[13].

Country	2017 GDP	2018 GDP	2019 GDP	2020 GDP	2019-2020 Pct. Change
Algeria	164.6	171.3	177.3	182.7	3.0%
Argentina	557.3	562.6	569.7	578.0	1.5%
Australia	1,239.3	1,277.6	1,320.9	1,368.3	3.6%
Austria	395.8	402.8	411.1	420.5	2.3%
Bangladesh	236.5	253.9	273.3	294.7	7.8%
Belgium	474.1	483.2	494.0	505.9	2.4%
Brazil	1,731.0	1,678.9	1,633.4	1,592.4	-2.5%
Canada	1,554.2	1,580.8	1,612.5	1,648.1	2.2%
Chile	254.5	260.3	267.0	274.4	2.8%
China	11,951.9	12,824.4	13,696.5	14,559.4	6.3%
Colombia	287.2	296.0	305.9	316.7	3.5%
Czech Republic	203.0	212.1	222.1	233.1	5.0%
Denmark	312.4	319.5	327.8	336.9	2.8%
Egypt	347.4	364.3	380.2	394.8	3.9%
Finland	241.3	245.3	250.0	255.3	2.1%
France	2,492.9	2,533.5	2,582.3	2,637.2	2.1%
Germany	3,541.9	3,624.9	3,720.7	3,826.5	2.8%
Greece	192.2	192.6	192.1	190.6	-0.8%
Hong Kong	328.1	337.2	347.6	359.0	3.3%
Hungary	129.3	133.6	138.4	143.6	3.8%
India	2,447.8	2,646.9	2,848.9	3,052.2	7.1%
Indonesia	978.4	1,031.8	1,091.1	1,156.1	6.0%
Iran	444.2	473.2	501.8	529.6	5.5%
Iraq	184.9	200.5	216.3	232.3	7.4%
Ireland	318.9	332.2	344.3	355.1	3.1%
Israel	329.0	342.4	357.4	373.7	4.6%
Italy	1,876.1	1,902.5	1,934.9	1,971.8	1.9%
Japan	5,005.9	5,088.3	5,187.3	5,298.7	2.1%
Kazakhstan	138.8	141.1	143.8	146.9	2.1%
Kuwait	113.2	116.1	118.5	120.4	1.6%
Malaysia	310.2	326.1	343.8	363.1	5.6%
Mexico	1,110.2	1,150.1	1,194.8	1,243.7	4.1%
Netherlands	794.6	816.3	841.1	868.3	3.2%
New Zealand	196.7	205.4	213.6	220.9	3.5%
Nigeria	406.7	410.8	413.0	413.0	0.0%
Norway	376.7	384.3	393.3	403.2	2.5%
Pakistan	292.9	309.4	327.7	347.8	6.1%
Peru	198.5	206.6	215.7	225.7	4.6%
Phillipines	324.5	347.1	372.4	400.2	7.5%
Poland	487.2	506.0	527.0	550.0	4.4%
Portugal	208.6	213.3	216.9	219.6	1.2%
Puerto Rico	103.0	101.6	99.8	97.4	-2.4%
Qatar	156.8	162.1	166.8	170.8	2.4%
Romania	196.1	205.7	216.3	228.0	5.4%
Russia	1,265.1	1,252.1	1,243.0	1,236.5	-0.5%
Saudi Arabia	663.5	686.0	705.8	722.7	2.4%
Singapore	316.9	325.8	336.0	347.1	3.3%
South Africa	298.4	302.7	307.9	313.8	1.9%
South Korea	1,454.4	1,503.3	1,558.3	1,618.5	3.9%
Spain	1,278.7	1,328.0	1,372.5	1,411.7	2.9%
Sweden	534.4	557.7	579.4	599.0	3.4%
Switzerland	677.4	689.6	704.1	720.3	2.3%
Taiwan	580.2	595.8	613.7	633.3	3.2%
Thailand	424.7	440.2	457.6	476.6	4.2%
Turkey	903.7	950.1	994.2	1,035.3	4.1%
Ukraine	89.7	86.8	83.6	80.0	-4.2%
UAE	371.4	388.2	403.8	418.1	3.5%
United Kingdom	2,707.6	2,779.1	2,860.8	2,950.6	3.1%
United States	19,029.2	19,537.9	20,118.9	20,757.3	3.2%
Venezuela	432.5	417.8	401.5	383.8	-4.4%
Vietnam	218.4	233.6	250.5	269.2	7.4%

In the business data analytic companies, multiple clients, sales revenue, and service transformation (cloud computing, big data) are the benchmarks for growth[14].

High inflation, large government and private debt are all risks on the horizon, but there are no boom/bust forecasts. The worldwide economy is expected to grow by 3.2% in the coming year.[15]

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[13] Mergent Online, 2019 Worldwide Data Processing Services Industry-Industry & Market Report, pg. 7
[14] HSBC, Chinasoft Int'l Ltd (354 HK):-Initiate at Buy: Aiming for the clouds, 08Jul2019 (p. 7, 10-12)
[15] Mergent Online, 2019 Worldwide Data Processing Services Industry-Industry & Market Report (p131)

CUSTOMERS

Viviota is selling B2B, small business to large business. The product is not sold to another party after the initial transaction, so the large businesses they are working with are their final customers. These businesses are able to use the insights they gather through Viviota's Time-to-Insight software to make their own products better faster so they can release them to the public.

Demographics

Based on the interview with Viviota, their current and potential customer industries include automotive, part OEMs, aerospace, heavy equipment, medical devices, and semiconductors.

Psychographics

People buy big data analytics software because:

- Transferring data manually is error-prone[16]
- Solid big data analysis system = competitive edge[17]

They are looking for software that:

- Optimizes performance[18]
- Is integration based- Multiple systems can be molded together and the customer knows the integration will be error-less
- Reduces the manual time spent testing

Customers buy whatever products they have heard of that fit their needs. Most of the products on the market are still pretty obscure or specific to certain needs. Companies are looking for software that will be easy to integrate while fixing their current and foreseeable problems. A lot of times companies will create software in-house because they are looking for a specific fix to a specific problem and there aren't many versatile softwares out there, most are still pretty niche. The people who tend to create those in-house softwares don't usually have the knowledge base necessary to create a particularly good software, so many organizations are running sub-par data analysis software at the moment.

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[16] ACM, Big Data Software Analytics with Apache Spark, 2018.
[17] IEEE Intelligent System 30, Research Directions for Engineering Big Data Analytics Software, 2015 (p13-19)
[18] Software Quality Journal 26, Predicting Failures in Agile Software Development through Data Analytics, 2018 (p49-66)

Academic Research: What Are Customers Looking For?

This paper[19] is specifically on how people who code feel about having to do documentation. The researchers found that people who code generally dislike going through the documentation process, though it is incredibly important. They see value in it as a learning tool because you become familiar with the information, but it takes up time, and you have to have already been familiar with the topic in order to produce good documentation, so many find the task to be mundane. This perspective could likely be reflected in engineers and researchers who are wanting to look at their data quickly without having to sift through a lot of material. The study also found that more than 75% of people don't feel like they spend enough time reflecting on data, which means that the majority of the population can benefit from data being easier to process.
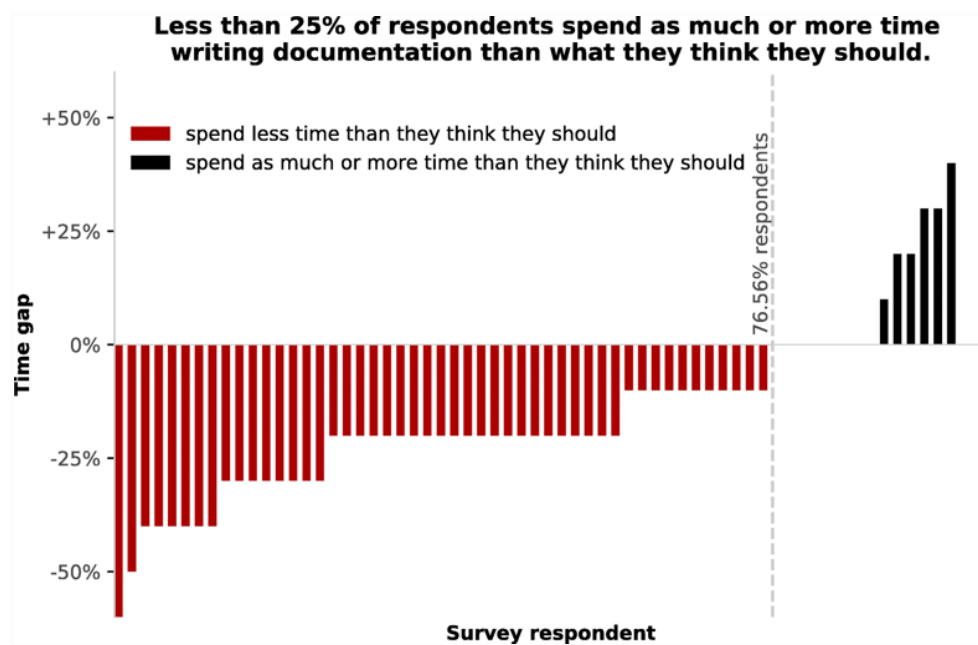

Question Asked: One thing that some people have suggested is that documentation is a good place for people who are new to open source to get started. How do you feel about that?

Additionally, a study[20] was conducted that looked at how big data was going to impact industries in the future. The researchers found that the impact would be significant, and stated that organizations need to find a solution to this problem that is "big data." These were some of the questions they asked their interviewees.

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[19] Computer Supported Cooperative Work, The Types, Roles, and Practices of Documentation in Data Analytics Open Source Software Libraries, 2018 (p767-802)
[20] Research-Technology Management 60, Big Data and the Future of R&D Management, 2017 (p43-51)

Industry Markets

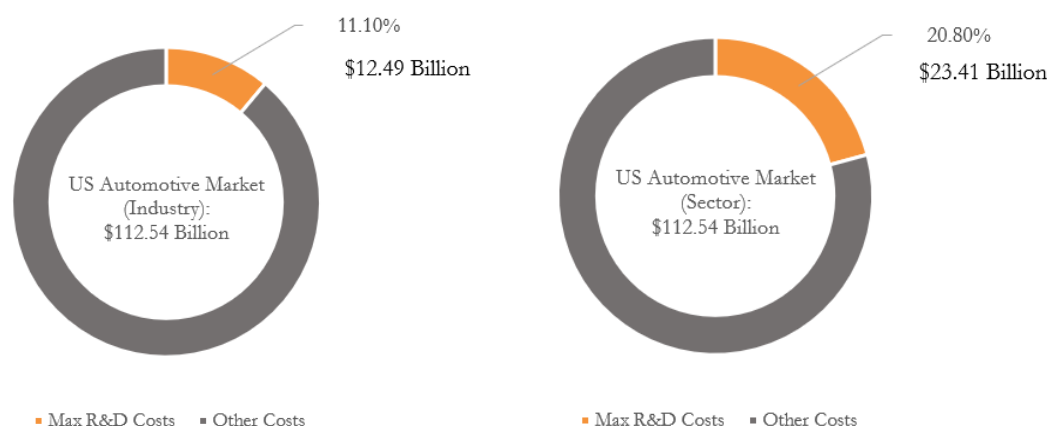

US Market Potential- by Industry (2019)
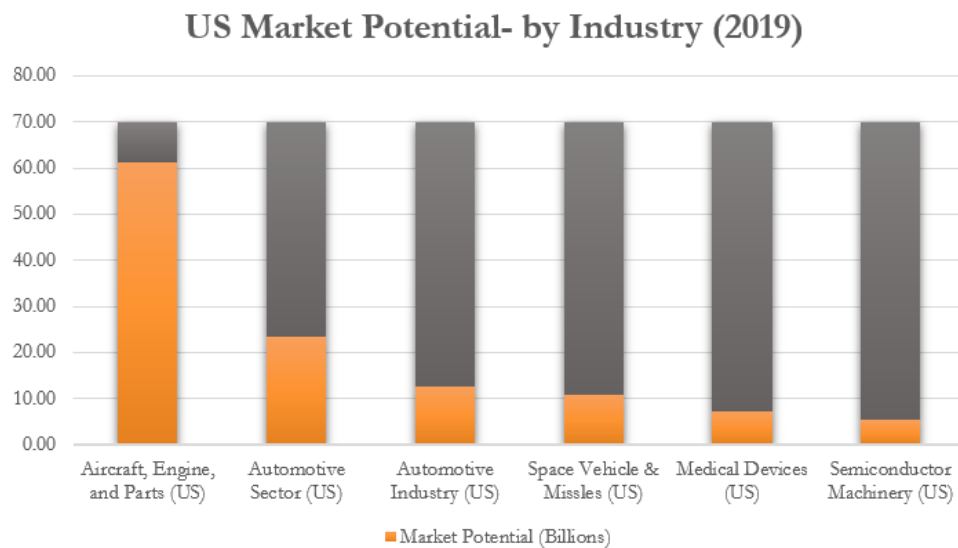
Automotive (Global & US)

"Other" costs in the **global automotive market**[21] make up 11.9% of the revenue across 363 enterprises (approximately $360.68 billion in 2019). These include rent and utilities, **R&D**, administrative costs, insurance, legal fees and logistics.


11.90%
$360.68 Billion

Global Automotive Market:
$3,030.9 Billion

■ Max R&D Costs   ■ Other Costs

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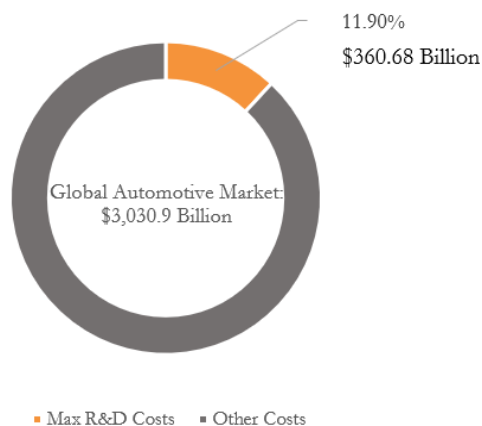
[21] IBISWorld Industry Report C2531-GL, Global Car & Automobile Manufacturing, April 2019

"Other" costs in the **US automotive market**[22] make up 11.1% of revenue in the **industry** (approximately $12.49 billion in 2019) and 20.8% of the revenue in the **sector** across 157 enterprises (approximately $23.41 billion in 2019). These costs include research and development and general machine and building maintenance.

11.10%
$12.49 Billion

US Automotive Market
(Industry):
$112.54 Billion

■ Max R&D Costs   ■ Other Costs

20.80%
$23.41 Billion

US Automotive Market
(Sector):
$112.54 Billion

■ Max R&D Costs   ■ Other Costs

Aircraft, Engine, and Parts Manufacturing (US)

"Other" costs include computer hardware and software, communication services, repairs, insurance, contract-related expenses, **R&D** and maintenance. Collectively, these costs account for 25.4%[23] of industry revenue across 1,437 enterprises. ($61.1 billion in 2019)

25.40%
$61.1 Billion

Aircraft, Engine, and Parts
Manufacturing Market (US):
$240.54 Billion

■ Max R&D Costs   ■ Other Costs

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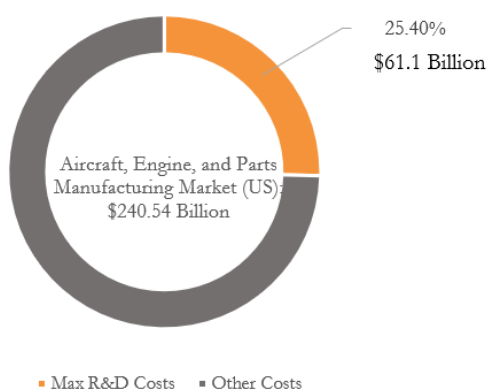
[22] IBISWorld Industry Report 33611a- Car & Automobile Manufacturing in the US, July 2019
[23] IBISWorld Industry Report 33641a, Aircraft, Engine & Parts Manufacturing in the US, August 2019
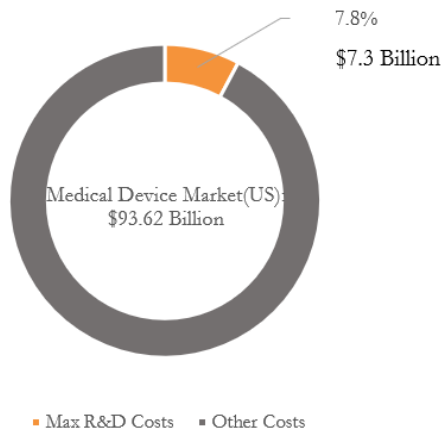
Space Vehicle & Missile Manufacturing (US)

Complete space systems and relevant **R&D**[24], account for an estimated 34.7% of revenue across 82 enterprises. ($10.93 billion in 2019)

34.70%

$10.93 Billion

Space Vehicle & Missle
Manufacturing Market (US):
$31.54 Billion

■ Max R&D Costs   ■ Other Costs
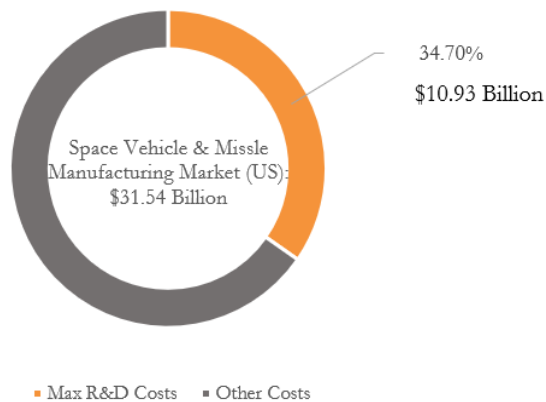
Medical Devices (US)

Research and development (**R&D**) expenses account for 7.8% of industry revenue across 16,105 enterprises[25]. ($7.3 billion in 2019)

7.8%

$7.3 Billion

Medical Device Market(US):
$93.62 Billion

■ Max R&D Costs   ■ Other Costs

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[24] IBISWorld Industry Report 33641b, Space Vehicle & Missile Manufacturing in the US, September 2019
[25] IBISWorld Industry Report 33911a, Medical Instrument & Supply Manufacturing in the US, December 2018

Semiconductor Machinery (US)

<u>Various R&D</u> costs account for 28.8% of revenue across 157 enterprises.[26] ($5.45 billion)

$5.45 Billion

Semiconductor Machinery
Manufacturing Market(US):
$18.91 Billion

■ Max R&D Costs　　■ Other Costs

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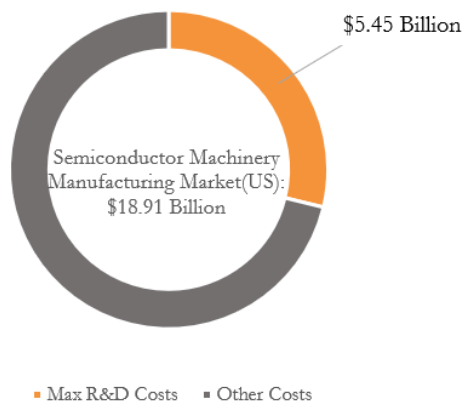
[26] IBISWorld Industry Report 33329a, Semiconductor Machinery Manufacturing in the US, September 2019

COMPETITORS

In the Big Data and Analytics market, there are quite a few big companies providing data management and analytics software tools.[27]

IBM, as the biggest big data vendor in this market, has introduced new Watson solutions, an AI-integrated data analytics platform, to a variety of industries in 2018. These industries include agriculture, customer service, human resources, supply chain, manufacturing, building management, automotive, marketing, and advertising.[28] IBM is also partnered with Motio, Inc., an organization that produces software meant specifically for managing business intelligence.

In addition, we found a company providing data services to one of Viviota's current customers, NASA.[29] This company is TIBCO with $2.3B estimated revenue annually. TIBCO's industrial solution offerings include healthcare, financial services, telecommunications, energy, retail, manufacturing, transportation, logistics, government and insurance.[30]

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[27] Wikibon, 2018 Big Data and Analytics Market Share, 06Mar2018
[28] IBM newsroom, IBM AI Toolset Release, 24Sep2018
[29] TIBCO website, Customer: NASA
[30] GlobalData, TIBCO SWOT Analysis, Oct2019 (p20)

Top 5 Competitors

Datadog, Inc.

1 Assigned Properties/Patents.

Datadog, Inc is likely Viviota's number one competitor. They are bringing in a lot of revenue ($310.7 Million) annually, and they have a product that provides similar functions to Viviota's Time-to-Insight software.

Cloudera, Inc.

43 Assigned Properties/Patents

Cloudera, Inc has the annual revenue ($647.7 Million) to be able to break into the data processing industry in the same way Viviota is. Cloudera has several software programs, and this breadth has allowed them the ability to dominate a large portion of the market. They do not yet provide software that is entirely comparable to Viviota.

TIBCO Software, Inc

94 Assigned Properties/Patents

TIBCO Software, Inc has the annual revenue ($1.08 Billion) and the products to be able to perform well in the same market as Viviota. TIBCO acquired Composites Software, LLC in 2017, and this acquisition has given TIBCO a product that can process data and provide a virtual representation of that data.

## Altamira Technologies Corporation

5 Assigned Properties/Patents

Altamira Technologies Corporation brought in $49.7 Million in revenue last year. They provide a very niche product, but it is similar to Vivota's Time-to-Insight software. They are able to provide their customers with an open source big data fusion, analysis, and visualization platform that enables users to discover connections and explore relationships in their data. This is a company Viviota should watch in the years to come.

Datawatch Corporation (Altair Knowledgeworks)

165 Assigned Properties/Patents

Datawatch Corporation recently rebranded to Altair Knowledgeworks. They only brought in $41.7 Million in revenue last year, but they provide a product that is almost identical to Viviota's product. This is another company that should stay on Viviota's radar as they continue to grow.

Magic Quadrant
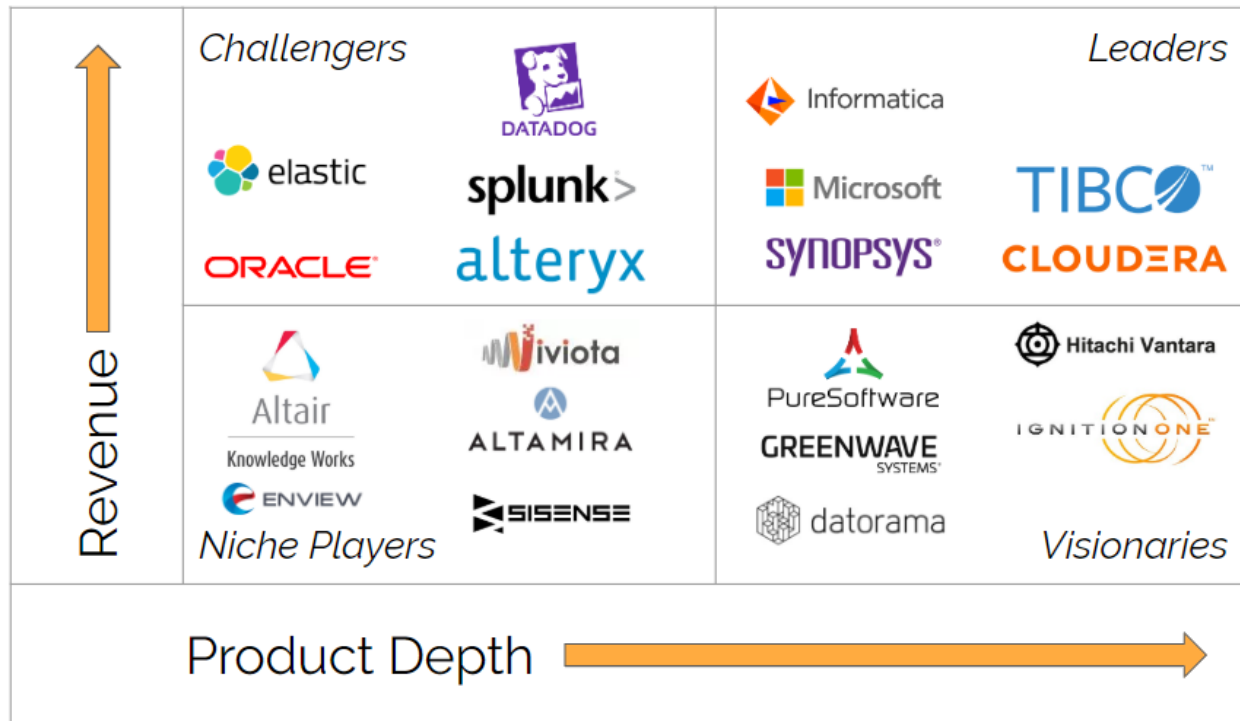
We have taken what we consider to be the Top 20 competitors in the Big Data Analysis industry and distributed them on this chart to visualize how Viviota compares to their competition. All of these companies either identify as being in the software industry or provide consulting services for data analysis.

The x-axis on the chart correlates to the products a company has. We took into consideration both the number of products a company has that perform different functions, as well as how well developed those products are.

The y-axis on the chart correlates to the amount of revenue a company made in the last twelve months (LTM). These numbers were found on the Capital IQ database. If a company reported a revenue less than $50 million in the LTM, they fall into the Niche Players and Visionaries categories, if they made more than $50 million in the LTM, they fell into the Challengers and Leaders categories.

Leaders

Leaders have the strongest range of products with new products coming out and addressing new markets and customers with the most revenue. All of the competitors considered as Leaders are bringing in $500 Million[31] in revenue annually.

Microsoft Corporation has been around for a very long time. They bring in $129.8 Billion in revenue, and they have services categorized for different needs[32] and industries[33]. Microsoft is continually buying companies to expand their services, so they could very easily expand into data preparation. TIBCO Software, Inc brought in $1.08 Billion in revenue in the LTM. They offer a range of services, and they even bought out one of Viviota's direct competitors, Composite Software LLC.

Company Name	Founded:	# Employees	Revenue LTM (Last twelve months)	Industry
Cloudera, Inc	2008	2,947	$647.7 Million	Application Software
Informatica LLC	1993	3,664	$1.o6 Billion	Application Software
Microsoft Corporation	1975	144,000	$129.8 Billion	Systems Software
Synopsys, Inc.	1986	13,245	$3.3 Billion	Application Software
TIBCO Software, Inc.	1985	3,856	$1.08 Billion	Application Software

Cloudera:

> Provides a suite of data analytics and management products in the United States, Europe, and Asia. The company operates through two segments, Subscription and Services. It offers Cloudera Enterprise Data Hub that **allows companies to execute various analytic functions against a shared set of governed and secures data in public and private clouds, and data centers**; Cloudera Data Warehouse, a hybrid cloud solution for self-service analytics; Cloudera Data Science and Engineering **enables users to streamline, simplify, and scale big data processing**; and Cloudera Operational DB that **enables stream processing and real-time analytics on continuously changing data.**

Informatica LLC:

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[31] All competitor information listed comes from CapIQ research.
[32] Microsoft, Find the analytics product you need
[33] Microsoft, Solutions by Industry

Develops data integration software solutions. The company **offers big data, cloud management, data integration, data quality and security, and master data management solutions.** Its enterprise data integration products include PowerCenter, PowerExchange, and Data Integration Hub; PowerCenter Express, an entry-level data integration and profiling edition for departments or small to mid-market business; and cloud data integration solutions. The company also provides Data Quality products, such as Data Quality editions and data-as-a-service offerings to stakeholders, projects, and data domains; and Big Data Solutions comprising Big Data Solution, Big Data Parsing, and Vibe Data Stream. In addition, it offers **Master Data Management (MDM) products, such as MDM, Product Information Management, Identity Resolution, and Cloud MDM**; and Informatica Data Security Group products, such as Data Archive, Data Subset, Persistent Data Masking, Dynamic Data Masking, and ILM Nearline. Further, the company offers data exchange products, including **Data Transformation for converting structured and unstructured data-to-data formats**; HParser, a data handler; and Informatica Rev, a data preparation solution. Additionally, it provides other data integration software solutions comprising complex event processing, data replication, procurement, and ultra-messaging; and product-related customer support, consulting, and education services.

Microsoft Corporation:

Develops, licenses, and supports software, services, devices, and solutions worldwide. The company's Productivity and Business Processes segment offers Office, Exchange, SharePoint, Microsoft Teams, Office 365 Security and Compliance, and Skype for Business, as well as related Client Access Licenses (CAL); and Skype, Outlook.com, and OneDrive. It also provides LinkedIn that includes Talent and marketing solutions, and subscriptions; and Dynamics 365, a set of cloud-based and on-premises business solutions for small and medium businesses, large organizations, and divisions of enterprises. The company's Intelligent Cloud segment licenses SQL and Windows Servers, Visual Studio, System Center, and related CALs; GitHub that provides a collaboration platform and code hosting service for developers; and Azure, a cloud platform. It also provides support services and Microsoft consulting services to assist customers in developing, deploying, and managing Microsoft server and desktop solutions; and training and certification to developers and IT professionals on various Microsoft products.

Synopsys, Inc

Provides electronic design automation **software products used to design and test integrated circuits** (ICs). It offers Fusion Design Platform, a **digital design implementation solution**; Verification Continuum Platform that provides **virtual prototyping, static and formal verification, simulation, emulation, field-programmable gate array (FPGA)-based prototyping, and debug solutions;** and FPGA design products that are programmed to perform specific functions. The company also offers intellectual property (IP) solutions for USB, PCI Express, DDR, Ethernet, SATA, MIPI, HDMI, and Bluetooth low energy applications; analog IP, including **data converters and audio codecs; and system-on-chip infrastructure IP, datapath and building block IP, and verification IP products, as well as mathematical and floating point components, and ARM AMBA interconnect fabric and peripherals**. In addition, it provides logic libraries and embedded memories; configurable processor cores and application-specific instruction-set processor tools for embedded applications; IP subsystems for audio, sensor, and data fusion functionality; and security IP solutions. Further, the company offers Platform Architect tools for SoC architecture **analysis and optimization; virtual prototyping solutions; and HAPS FPGA-based prototyping systems, as well as a series of tools used in the design of optical systems and photonic devices**. Additionally, it provides **security testing, managed services, programs and professional services, and training that enable its customers to detect and remediate defects in the software development lifecycle**; manufacturing solutions for semiconductor manufacturers; and professional and other services.

TIBCO Software, Inc

Provides infrastructure and business intelligence software worldwide. The company offers products in the areas of integration and core infrastructure; business optimization; and **process automation and collaboration**. Its integration and core infrastructure product line helps organizations integrate their disparate systems and move towards flexible infrastructure comprising services or discrete data components that can be assembled, orchestrated, and reused; enables the creation, management, and virtualization of heterogeneous services; and provides a unified environment for policy and service management. The company's business optimization software tracks large volumes of real-time events as they occur and applies rules in order to identify patterns that signify problems, threats, and opportunities; automatically initiates appropriate notifications or adaptations of processes; and helps employees to perform their jobs, managers to identify and analyze problems and aberrations, and executives to spot opportunities and risks. Its process automation and collaboration software helps organizations coordinate manual and automated process flows that span their business; enables employees to collaborate in

real-time using social media; and coordinates the human and electronic resources inside a business and its network of customers and partners. The company also provides professional services, which include consulting services, such as systems planning and design, installation, and systems integration; maintenance and support; training; and hosted services.

TIBCO recently acquired Composite Software, LLC. Their software **develops and delivers data virtualization software solutions** to organizations in the United States and internationally. It offers Data Virtualization Platform, which **virtually integrates data from various sources, helps to gain insight from data, respond to analytics and business intelligence (BI) needs, and supports data virtualization lifecycle**; Information Server that builds and runs Data Virtualization Platform, which queries, accesses, federates, abstracts, and delivers data to consuming business solutions on demand; and CIS Adapters, which simplify and accelerate access to a range of data sources, including enterprise applications, relational and multi-dimensional data sources, big data stores, and Web content. The company also provides agile analytics and BI solutions, including analytic data hubs, analytic sandboxes, self-service and operational BI, data warehouse extension, and data mashups; data integration solutions comprising big data integration, cloud data integration, logical data warehouse, legacy migration, master data management, and SAP data integration; and business solutions, such as customer experience management, governance and risk/compliance, human capital management, mergers and acquisitions, single view of enterprise data, and supply chain management. Bought by TIBCO in 2017.

Challengers

Challengers have a strong base of customers, with all Challengers making at least $50 Million in revenue annually. These companies do not display a full range of products, but they might make their way into being a Leader one day.

Splunk made $2.04 Billion in revenue LTM, but their solutions seem short-sighted. The company offers services that monitor the security of their customers data, but that appears to be where they focus most, if not all, of their efforts. Elastic N.V. brought in $304.7 Million in revenue in the LTM. They are a very similar product to Viviota in that their software is built to ingest and store data from various sources and formats, as well as perform search, analysis, and visualization. Their scope does not reach beyond that.

Company Name	Founded:	# Employees	Revenue LTM (Last twelve months)	Industry
Alteryx, Inc	1997	1,176	$350.6 Million	Application Software
Datadog, Inc	2010	1,035	$310.7 Million	Application Software
Elastic N.V.	2012	1,442	$304.7 Million	Application Software
Oracle Corporation	1977	136,000	$39.5 Billion	Systems Software
Splunk Inc.	2003	4,400	$2.04 Billion	Application Software

Alteryx, Inc

Operates **a self-service data analytics software platform that enables organizations to enhance business outcomes and the productivity of their business analysts,** data scientists, and citizen data scientists worldwide. Its software platform includes Alteryx Designer, **a data profiling, preparation, blending, and analytics product used to create visual workflows or analytic processes;** Alteryx Server, a server-based **product for scheduling, sharing, and running analytic processes and applications in a Web-based environment**; Alteryx Connect, a collaborative data exploration platform for discovering information assets and sharing recommendations across the enterprise; and Alteryx Promote, **an analytics model management product for data scientists and analytics teams to build, manage, monitor, and deploy predictive models into real-time production applications.** The company also offers Alteryx Analytics Gallery, a cloud-based collaboration offering that allows users to share workflows in a centralized repository; and Alteryx Community, which allows users to gain valuable insights in its platform. In addition, it provides technical support, instruction, and customer services.

Datadog, Inc.

Provides **monitoring and analytics platform for developers, information technology operations teams, and business users** in the cloud in North America and internationally. Its SaaS platform integrates and automates infrastructure monitoring, application performance monitoring, and log management to provide real-time observability of customers technology stack.

Elastic N.V.

Primarily offers Elastic Stack, a set of software products that **ingest and store data from various sources and formats, as well as perform search, analysis, and visualization**. The company's Elastic Stack product comprises Elasticsearch, a distributed, **real-time search and analytics engine, and data store for various types of data**, including textual, numerical, geospatial, structured, and unstructured; Kibana, a user interface, management, and configuration interface for the Elastic Stack; Beats, a single-purpose data shippers for sending data from edge machines to Elasticsearch or Logstash; and Logstash, a data processing pipeline for ingesting data into Elasticsearch or other storage systems.

Oracle Corporation

Provides products and services that address enterprise information technology environments worldwide. Its Software as a Service offerings include a suite of cloud software applications, including enterprise resource planning, human capital management, customer experience, and supply chain management, among others, as well as cloud-based industry solutions. The company also **provides cloud Infrastructure as a Service; enterprise database; database products,** including MySQL, Oracle TimesTen In-Memory Database, Oracle Berkeley DB, and Oracle NoSQL Database; **middleware software; Java; server and storage products; hardware products and services comprising point-of-sale terminals and related hardware for managing businesses**.

Splunk Inc.

Provides software solutions that **enable organizations to gain real-time operational intelligence** in the United States and internationally. Its products **enable users to investigate, monitor, analyze, and act on data regardless of format or source**. The company offers Splunk Enterprise, a machine data platform with collection, indexing, search, reporting, analysis, alerting, monitoring, and data management capabilities; Splunk Cloud; and Splunk Light, which offers log search and analysis for small IT environments. It also provides Splunk Enterprise Security that addresses security threats and information, and event management; Splunk IT Service Intelligence, which monitors health and key performance indicators of critical IT and business services; Splunk User Behavior Analytics that detects cyber-attacks and insider threats; Splunk Phantom that automates and orchestrates incident response workflows; Splunk Machine Learning Toolkit; Splunk App for AWS that collects and analyzes data from amazon web services data sources; Splunk DB Connect to get business and enterprise context; and Cisco Firepower App for Splunk.

Visionaries

Visionaries have a strong product pipeline, though they are not making more than $50 Million annually in revenue. These companies show that they have a good handle on the market they are entering, and they could very well be on their way to being successful on their own if they are not acquired first.

Hitachi Vantara Corporation brought in $0.5 Million in revenue for the LTM. Hitachi Vantara provides several data services, but not as many as the leaders do. Their solutions are mainly related to AI-integrated analysis, data cloud infrastructure, and IoT. Besides, most of the listed visionaries are acquired by bigger players and Hitachi Vantara is one of the subsidiaries of Hitachi Ltd.

Knotice, Ltd. was acquired by IgnitionOne, Inc. in 2014. Knotice, Ltd. operates a data management platform that offers the intake and activation of data for messaging and analytics. The company's cloud-based data management platform allows marketers to know more and do more by consolidating customer information across various platforms and touch points within a big data environment. Its data management platform intakes disparate data sets; and provides normalization and segmentation on that data, as well as allows a user to push the resulting segmentation into live interactive channel environments. Because Knotice, Ltd. was acquired, they are now a part of a bigger organization that offers several different services. We were unable to find their revenue, so we categorized them as Visionaries as a precaution.

Company Name	Founded:	# Employees	Revenue LTM (Last twelve months)	Industry
Dataorama, Inc	2012	-	-	Application Software
Hitachi Vantara Corporation	1979	3,287	$0.5 Million	Internet Services & Infrastructure
Knotice, Ltd. (now Ignition One, Inc.)	2001	-	-	Application Software
Predixion Software, Inc. (now Greenwave Systems)	2009	56	$12.9 Million	Application Software
Puresoftware Pvt Ltd	2005	-	-	IT Consulting & Other Services

Datorama, Inc.

A marketing analytics company that provides marketing integration engine for enterprises, agencies, publishers, and platforms. Its Software-as-a-Service platform provides marketers the ability to connect their data sources together to form a single source of truth for reporting, decision making, and total control over their marketing performance. The company also provides Datorama TotalConnect, a solution that **allows users to create API-like connections with various data sources containing marketing, sales, service, commerce, and financial data;** Datorama API Connector Library that provides a selection of pre-built data connectors to **integrate data from marketing applications, databases, and big data platforms**; Datorama Analytics Center that provides a comprehensive analytics suite that ranges from standard KPI reporting to predictive analytics to analyze total marketing impact; Datorama Genius, an artificial intelligence capability that allows marketers to automate insights across all their marketing data; and Datorama SmartLenses that provides marketers with one-click dashboards for their popular marketing data sources to optimize performance, impact, and customer loyalty.

Hitachi Vantara Corporation

Provides **data transformation, IoT, cloud, big data, and analytics solutions**. It offers IoT and operations intelligence, big data integration and analytics, converged systems, cloud object platform, storage, data protection, data center management, and AI operations software products; and Lumada Manufacturing Insights, a suite of industrial Internet-of-things solutions. The company also **provides co-creation, cloud, big data analytics, modern data protection, infrastructure, application, customer support, and training and certification services.** In addition, it offers deliver IoT insight and outcome, data and analytics, accelerate digital transformation, transform to hybrid cloud, optimize application ecosystem, and data center modernization solutions.

Knotice, Ltd.

As of March 19, 2014, Knotice, Ltd. was acquired by IgnitionOne, Inc. Knotice, Ltd. operates a **data management platform that offers the intake and activation of data for messaging and analytics.** The company's cloud-based data management platform allows marketers to know more and do more by consolidating customer information across various platforms and touch points within a big data environment. **Its data management platform intakes disparate data sets; and provides normalization and segmentation on that data, as well as allows a user to push the resulting segmentation into live interactive channel environments.**

Predixion Software, Inc.

Predixion Software, Inc. is now a part of Greenwave Systems. Predixion Software develops real-time edge analytics platform that **provides real-time and visual edge analytics solutions for devices and gateways for original equipment manufacturers and enterprises**. It offers Predixion RIOT, a real-time visual edge analytics for the Internet of Things (IoT); Predixion RIOT Enterprise, which provides value from all IoT assets and gateways; Predixion RIOT One, a Java-based engine that operates on select gateway operating systems; and Predixion RIOT Nano, a small-footprint and native C/C++ engine that operates in IOT devices and communicates directly with IOT gateways. The company serves oil and gas, wind, telecommunication, manufacturing, fleet, medical devices, and smart cities markets.

Puresoftware Pvt Ltd

Provides software consulting and information technology (IT) consulting services. The company provides **digital services such as data analytics services and solutions; enterprise mobility solutions; cloud advisory services; Internet of Things (IoT); machine learning solutions; robotic process automation solution; artificial intelligence services and solutions; and digital accessibility services**. The company also provides enterprise application services, including application development services; independent testing services; enterprise application implementation; application support and maintenance services; and devops consulting services. Additionally, Puresoftware pvt ltd also provides engineering services, such as software product development services; software product verification and validation; product support and sustenance services; end-of-life product solutions; and embedded systems solutions.

Niche Players

Niche Players have a narrow customer base due to the lesser number of products they are developing. Most of the companies we have listed have been around for at least a decade, so the age of the company was not a factor. Revenue falls under $50 Million.

Datawatch Corporation was recently rebranded to Altair Knowledge Works. They brought in $41.7 Million in revenue for the LTM. It appears that Datawatch provides similar services to Viviota: self-service data preparation, predictive analytics, and visual data discovery. Its software solutions allow organizations to access, analyze, and visualize their information and allow users to explore, manipulate, and merge new data sources. Their scope does not extend beyond the analysis of data.

Sisense brought in $1.91 Million in revenue in the LTM. Like Datawatch (Altair Knowledge Works) and Viviota, they provide business intelligence and data analytics software solutions. The company offers a business intelligence tool that enables users to manage, analyze, and visualize complex data for big and disparate datasets as well as join data from multiple sources; analyze with data visualizations; and share interactive dashboards. Their scope does not extend beyond data analysis.

Company Name	Founded:	# Employees	Revenue LTM (Last twelve months)	Industry
Altamira Technologies Corporation	1999	346	$49.7 Million	Interactive Media & Services
Datawatch Corporation (now Altair)	1985	189	$41.7 Million	Application Software
Enview	2015	-	-	Research & Consulting Services
Sisense Inc.	2005	185	$1.91 Million	Application Software
Viviota	2016	-	-	Application Software

Altamira Technologies Corporation

Provides defense engineering, analytic services, and open source software solutions for **intelligence and defense communities.** The company offers analytics solutions, such as advanced data analytics, cyber analytics, and multi-INT analytics; engineering solutions that include software engineering, advanced engineering, and cyber engineering services. It also provides Lumify, an **open source big data fusion, analysis, and visualization platform that enables users to discover connections and explore relationships in their data** and Direct Spatial Antenna Modulation, a solution that control antenna arrays and allows power pattern control and destruction of information as a function of angle at the electromagnetic wave level. Additionally, the company provides research and development services.

Datawatch Corporation (now Altair Engineering)

Datawatch Corporation has recently rebranded to Altair Engineering. Datawatch Corporation designs, develops, markets, and distributes business computer software products to **self-service data preparation, predictive analytics, and visual data discovery markets** in the United States and internationally. Its software solutions **allow organizations to access, analyze, and visualize their information.** The company's products include Datawatch Monarch, a self-service data preparation tool, which **allows users to explore, manipulate, and merge new data sources**; Datawatch Swarm, a browser-based platform that offers team-driven data preparation and centralized data marketplace for speed collaboration and drive data governance; Datawatch Panopticon designed for data analysis; and Datawatch Angoss, an analytics and data science platform.

Enview

Automates geospatial big data for the energy industry to enhance the safety, reliability, and compliance of pipeline and powerline operations. It offers advanced data analytics, remote sensing, and geospatial big data to prevent threats from becoming incidents that impact families, businesses, and the environment. The company uses intelligent algorithms that fuse and analyze multiple sensor sources to see more than the human eye, predictive analytics **use today's data to identify future threats before they can have an impact**, and GIS and **elegant data visualizations** complex stories that support risk-based decision making.

Sisense Inc.

Develops In-Chip and Single Stack **business intelligence and data analytics software solutions**. The company offers Sisense, **a business intelligence tool that enables to manage, analyze, and visualize complex data for big and disparate datasets. Its business analytics software solution facilitates to join data from multiple sources; analyze with data visualizations; and share interactive dashboards**. The company also provides technical support, professional, and other services. It serves companies from start-ups to enterprises, department heads, small and medium business managers, and other business users in retail, manufacturing, consumer products, healthcare, green business intelligence, Web marketing analytics, and embedded analytics industries.

Viviota Inc.

Develops a software for vehicle and device manufacturers. It offers Time-to-Insight (TTI), a software that automates engineering sensor data management relieving design and prototyping tasks. Its platform manages and automates engineering data and analysis. Viviota Inc. was incorporated in 2016 and is based in Austin, Texas.

Mergers and Acquisitions

When looking at the companies we identified as competitors, we found 47 closed transactions and 33 announced transactions since November of 2016.

Of those, 5 were mergers and acquisitions. Salesforce.com, Inc bought Datorama Inc for $757.85 Million, and Altair Engineering, Inc bought Datawatch Corporation for $187.24 Million. Additionally, Altamira Technologies Corporation, Composite Software LLC, and Predixion Software, Inc were involved in M&A transactions that don't list their selling price.

CRYSTAL BALL

Market Trends

IDC points out 3 key trends in the big data analytics software industry, which are:

- the increasing importance of data in the modern enterprise
- the ongoing shift to public cloud
- the growing use of artificial intelligence (AI) and machine learning (ML).[34]

Specifically talking about the data monitoring platform, the research for Datadog by Credit Suisse illustrates the envisioned platform system. From the graph, the trends mentioned above are further displayed here. First, the system provides the function to process different sources of data including historical and real-time data. Second, Datadog embeds machine learning in their system.[35]

The Future of Monitoring Platform Functionality

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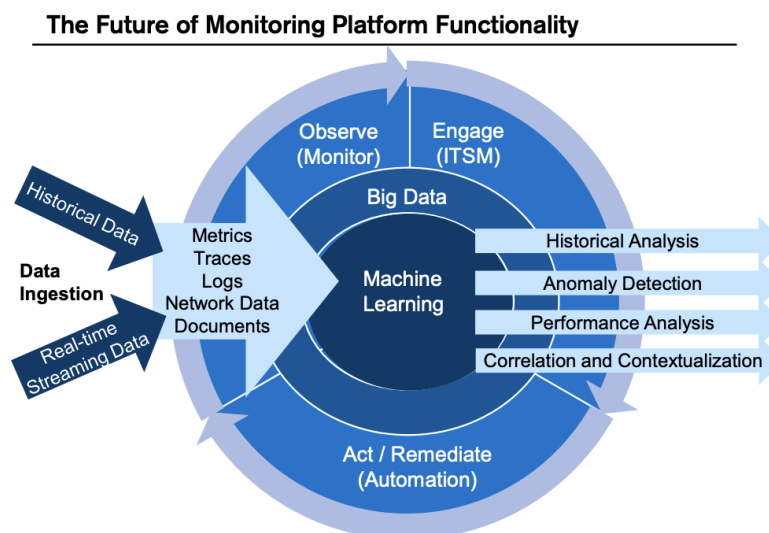
[34] IDC, BDA Forecast, Sep2018
[35] Credit Suisse, Datadog: Initiating at Neutral, 6Nov2019 (p23)

Future Forecast

Since most modern companies are increasingly investing in the digital transformation, the data analytics market is expected to grow with 10-13% CAGR in the coming years. Companies who leverage their strengths to fit these needs could be potential rising stars in this industry.

At the same time, this market is getting more and more competitive, and there are quite a few big players already, such as Oracle and SAP. Also, big companies who provide cloud service are entering the data analytics market including Amazon, Google, and Microsoft.

The M&A made by these big players are mostly tuck-ins because of the technologies the acquired companies had developed. Bigger companies want to augment their capabilities with new products. Some of the cases we saw are related to real-time, open source, and cloud-based data services. Besides, the big players will focus on using predictive analysis (such as AI and ML) to provide their services. However, Viviota hasn't provided corresponding technologies in their products, and this might be their potential weakness.

The data analytics platform is commonly used as an outsourcing service in other markets. The growth of the data analytics market is related to the needs of data in other customer markets. In other words, the potential customer base for Viviota would be related to the customer market, and the legacy clients will be an important factor for the company to grow as well.

According to Viviota's customer markets, these markets will grow slowly but steadily. Hence, the need for Viviota's software should increase. Furthermore, the data analysis market is not only growing in the US, but also growing internationally.

Viviota is in a position where they can continue to be successful for years to come. The work they have done with Big-Name organizations has put them on the map, and previous acquisitions have shown that there is a demand for the type of software Viviota specializes in.