Data Quality Buyers Guide

Software Provider and Product Assessment

ISG Research™

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Data Quality

Maintaining data quality and trust is a perennial data-management challenge, often preventing enterprises from operating at the speed of business. As organizations aspire to be more data-driven, trust in the data used to make decisions becomes more critical. Without data quality processes and tools, enterprises may make decisions based on old, incomplete, incorrect or poorly organized data. Assessing the quality of data used to make business decisions is not only more important than ever but also increasingly difficult, given the growing range of data sources and the volume of data that needs to be evaluated.

ISG Research defines data quality as both a discipline and a product category. As a discipline, data quality refers to the processes, methods and tools used to measure the suitability of a dataset for a specific purpose. The precise measure of suitability will depend on the individual use case, but important characteristics include accuracy, completeness, consistency, timeliness and validity. The data quality product category is comprised of the tools used to evaluate data in relation to these characteristics. The potential value of data quality products is clear: Poor data quality processes can result in security and privacy risks as well as unnecessary data storage and processing costs due to data duplication. Additionally, assessing the quality of data is one of the most time-consuming aspects of analytics initiatives. Almost two-thirds of enterprises participating in our Analytics and Data Benchmark Research cite reviewing data for quality and consistency issues as the most time-consuming task of analyzing data, second only to preparing data for analysis.

Without data quality processes and tools, enterprises may make decisions based on old, incomplete, incorrect or poorly organized data.

Traditionally, the data quality product category has been dominated by standalone products specifically focused on the requirements for assessing data quality. However, data quality functionality is also an essential component of data intelligence platforms that provide a holistic view of data production and consumption, as well as products that address other aspects of data intelligence, including data governance and master data management.

In recent years, we have seen the emergence of data observability focused on monitoring the quality and reliability of data used for analytics and governance projects and associated data pipelines. While we consider data observability to be a subset of Data Operations, as covered in our DataOps Buyers Guides, there is a clear overlap with data quality. Although data quality is more established as a discipline and product category for improving trust in data, enterprises that have invested in data quality might reasonably ask whether data observability is necessary. Businesses that have invested in data observability, however, might wonder whether to eschew traditional data quality tools.

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Data quality software is designed to help users identify and resolve data quality problems, typically related to a given task. For example, data quality software will be applied to assess the validity of data being used to serve a business intelligence report or dashboard to ensure the data is valid.

In comparison, data observability software focuses on automating the monitoring of data to assess its health based on key attributes, including freshness, distribution, volume, schema and lineage. It is concerned with the reliability and health of the overall data environment. Data observability tools monitor the data in an individual environment for a specific purpose at a given point in time but also monitor the associated upstream and downstream data pipelines. In doing so, data observability software ensures that data is available and up-to-date, avoiding downtime caused by lost or inaccurate data due to schema changes, system failures or broken data pipelines.

While data quality software is designed to help users identify and resolve specific data quality problems, data observability software automates the detection and identification of the causes of data quality problems, enabling users to prevent data quality issues before they occur.

While data quality software is designed to help users identify and resolve specific data quality problems, data observability software automates the detection and identification of the causes of data quality problems, enabling users to prevent data quality issues before they occur. For example, as long as the data being assessed remains consistent, data quality tools might not detect a failed pipeline until the data has become out-of-date. Data observability tools could detect the failure long before the data quality issue arose. Conversely, a change in a customer's address might not be identified by data observability tools if the new information adhered to the correct schema. It could be detected—and remediated—using data quality tools.

Data quality and data observability software products are, therefore, largely complementary. Some providers offer separate products in both categories, while others provide individual products that could be said to include functionality associated with both data observability and data quality. Potential customers are advised to pay close attention and evaluate purchases carefully. Some data observability products offer quality resolution and remediation functionality traditionally associated with data quality software, albeit not to the same depth and breadth. Additionally, some providers previously associated with data quality have adopted the term data observability but may lack the depth and breadth of pipeline monitoring and error detection capabilities.

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Automation is often cited as a distinction between data observability and data quality software. This, however, relies on an outdated view of data quality software. Although data quality software has historically provided users with an environment to check and correct data quality issues manually, the use of machine learning (ML) to automate the monitoring of data is being integrated into data quality tools and platforms to ensure that data is complete, valid and consistent as well as relevant and free from duplication.

In addition to data observability tools, potential customers should pay close attention to the data quality functionality offered by data intelligence, data governance and master data management platforms. Data intelligence platforms are likely to provide a superset of functionality addressing data quality, master data management and data governance as well as application and data integration. In comparison, while dedicated data governance and master data management products may offer some capabilities for assessing data quality, they may also be used alongside standalone data quality tools. Through 2026, three-quarters of enterprises will be engaged in data integrity initiatives to increase trust in data processes using data quality and master data management tools.

Our Data Quality Buyers Guide is designed to provide a holistic view of a software provider's ability to deliver the combination of functionality that provides a complete view of data quality with either a single product or suite of products. As such, the Data Quality Buyers Guide includes the full breadth of data quality functionality. Our assessment also considered whether the functionality in question was available from a software provider in a single offering or as a suite of products or cloud services.

The ISG Buyers Guide™ for Data Quality evaluates products based on data profiling, data quality rules and data quality insights. To be included in this Buyers Guide, products must have capabilities that address the configuration of data quality software. The evaluation also assessed the use of artificial intelligence to automate and enhance data quality.

This research evaluates the following software providers that offer products that address key elements of data quality as we define it: Actian, Alation, Alibaba Cloud, AWS, Ataccama, Cloud Software Group, Collibra, Experian, Google Cloud, Huawei Cloud, IBM, Informatica, Melissa Data, Oracle, Precisely, Qlik, Quest Software, Reltio, SAS Institute and Syniti.

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Buyers Guide Overview

For over two decades, ISG Research has conducted market research in a spectrum of areas across business applications, tools and technologies. We have designed the Buyers Guide to provide a balanced perspective of software providers and products that is rooted in an understanding of the business requirements in any enterprise. Utilization of our research methodology and decades of experience enables our Buyers Guide to be an effective method to assess and select software providers and products. The findings of this research undertaking contribute to our comprehensive approach to rating software providers in a manner that is based on the assessments completed by an enterprise.

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The ISG Buyers Guide™ for Data Quality is the distillation of over a year of market and product research efforts. It is an assessment of how well software providers' offerings address enterprises' requirements for data quality software. The index is structured to support a request for information (RFI) that could be used in the request for proposal (RFP) process by incorporating all criteria needed to evaluate, select, utilize and maintain relationships with software providers. An effective product and customer experience with a provider can ensure the best long-term relationship and value achieved from a resource and financial investment.

In this Buyers Guide, ISG Research evaluates the software in seven key categories that are weighted to reflect buyers' needs based on our expertise and research. Five are product-experience related: Adaptability, Capability, Manageability, Reliability, and Usability. In addition, we consider two customer-experience categories: Validation, and Total Cost of Ownership/Return on Investment (TCO/ROI). To assess functionality, one of the components of Capability, we applied the ISG Research Value Index methodology and blueprint, which links the personas and processes for data quality to an enterprise's requirements.

The structure of the research reflects our understanding that the effective evaluation of software providers and products involves far more than just examining product features, potential revenue or customers generated from a provider's marketing and sales efforts. We believe it is important to take a comprehensive, research-based approach, since making the wrong choice of data quality technology can raise the total cost of ownership, lower the return on investment and hamper an enterprise's ability to reach its full performance potential. In addition, this approach can reduce the project's development and deployment time and eliminate the risk of relying on a short list of software providers that does not represent a best fit for your enterprise.

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ISG Research believes that an objective review of software providers and products is a critical business strategy for the adoption and implementation of data quality software and applications. An enterprise's review should include a thorough analysis of both what is possible and what is relevant. We urge enterprises to do a thorough job of evaluating data quality systems and tools and offer this Buyers Guide as both the results of our in-depth analysis of these providers and as an evaluation methodology.

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How To Use This Buyers Guide

Evaluating Software Providers: The Process

We recommend using the Buyers Guide to assess and evaluate new or existing software providers for your enterprise. The market research can be used as an evaluation framework to establish a formal request for information from providers on products and customer experience and will shorten the cycle time when creating an RFI. The steps listed below provide a process that can facilitate best possible outcomes.

1. Define the business case and goals.
   Define the mission and business case for investment and the expected outcomes from your organizational and technological efforts.
2. Specify the business needs.
   Defining the business requirements helps identify what specific capabilities are required with respect to people, processes, information and technology.
3. Assess the required roles and responsibilities.
   Identify the individuals required for success at every level of the enterprise from executives to frontline workers and determine the needs of each.
4. Outline the project's critical path.
   What needs to be done, in what order and who will do it? This outline should make clear the prior dependencies at each step of the project plan.
5. Ascertain the technology approach.
   Determine the business and technology approach that most closely aligns to your enterprise's requirements.
6. Establish software provider evaluation criteria.
   Utilize the product experience: Adaptability, Capability, Manageability, Reliability and Usability, and the customer experience in TCO/ROI and Validation.
7. Evaluate and select the technology properly.
   Weight the categories in the technology evaluation criteria to reflect your enterprise's priorities to determine the short list of software providers and products.
8. Establish the business initiative team to start the project.
   Identify who will lead the project and the members of the team needed to plan and execute it with timelines, priorities and resources.

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The Findings

All of the products we evaluated are feature-rich, but not all the capabilities offered by a software provider are equally valuable to types of workers or support everything needed to manage products on a continuous basis. Moreover, the existence of too many capabilities may be a negative factor for an enterprise if it introduces unnecessary complexity. Nonetheless, you may decide that a larger number of features in the product is a plus, especially if some of them match your enterprise's established practices or support an initiative that is driving the purchase of new software.

Factors beyond features and functions or software provider assessments may become a deciding factor. For example, an enterprise may face budget constraints such that the TCO evaluation can tip the balance to one provider or another. This is where the Value Index methodology and the appropriate category weighting can be applied to determine the best fit of software providers and products to your specific needs.

Overall Scoring of Software Providers Across Categories

The research finds Informatica atop the list, followed by IBM and Oracle. Companies that place in the top three of a category earn the designation of Leader. Oracle and Informatica have done so in five categories; IBM in three; Actian and Google Cloud in two; and Alation, AWS, Experian and Qlik in one category.

Data Quality
Overall

Providers	Grade	Performance
Informatica	A-	Leader 81.9%
IBM	B++	Leader 79.0%
Oracle	B++	Leader 77.3%
AWS	B++	76.1%
Experian	B+	73.4%
Alation	B+	72.4%
Actian	B+	71.5%
Collibra	B+	70.4%
Google Cloud	B+	70.4%
Huawei Cloud	B	68.6%
Alibaba Cloud	B	67.2%
Qlik	B	66.7%
Precisely	B	63.0%
Cloud Software Group	B-	59.5%
Quest Software	B-	58.4%
Reltio	B-	60.9%
Ataccama	B-	57.7%
SAS Institute	C++	55.8%
Syniti	C++	55.8%
Melissa Data	C+	46.5%

Source: ISG Research
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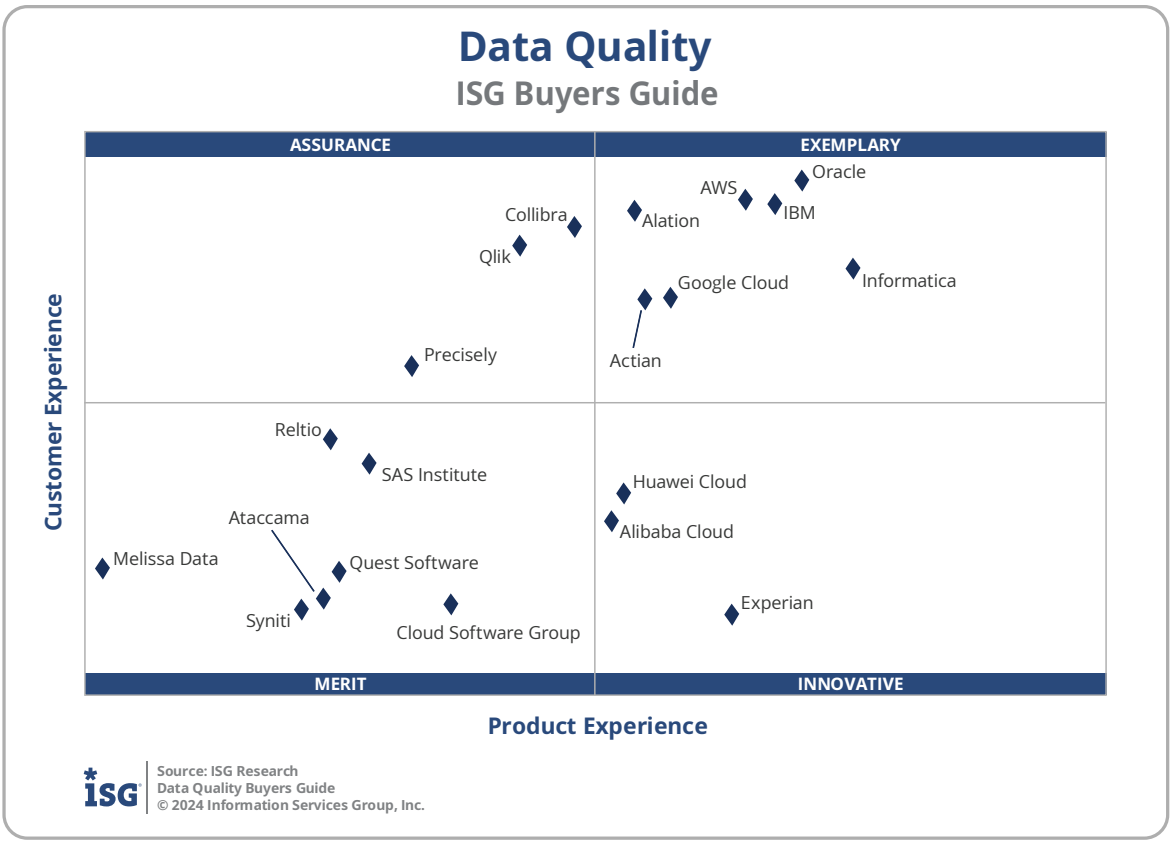
The overall representation of the research below places the rating of the Product Experience and Customer Experience on the *x* and *y* axes, respectively, to provide a visual representation and classification of the software providers. Those providers whose Product Experience have a higher weighted performance to the axis in aggregate of the five product categories place farther to the right, while the performance and weighting for the two Customer Experience categories determines placement on the vertical axis. In short, software providers that place closer to the upper-right on this chart performed better than those closer to the lower-left.

The research places software providers into one of four overall categories: Assurance, Exemplary, Merit or Innovative. This representation classifies providers' overall weighted performance.



Exemplary: The categorization and placement of software providers in Exemplary (upper right) represent those that performed the best in meeting the overall Product and Customer Experience requirements. The providers rated Exemplary are: Actian, Alation, AWS, Google Cloud, IBM, Informatica and Oracle.

Innovative: The categorization and placement of software providers in Innovative (lower right) represent those that performed the best in meeting the overall Product Experience requirements but did not achieve the highest levels of requirements in Customer Experience. The providers rated Innovative are: Alibaba Cloud, Experian and Huawei Cloud.

Assurance: The categorization and placement of software providers in Assurance (upper left) represent those that achieved the highest levels in the overall Customer Experience requirements but did not achieve the highest levels of Product Experience. The providers rated Assurance are: Collibra, Precisely and Qlik.

Merit: The categorization of software providers in Merit (lower left) represents those that did not exceed the median of performance in Customer or Product Experience, or surpass the threshold for the other three categories. The providers rated Merit are: Ataccama, Cloud Software Group, Melissa Data, Quest Software, Reltio, SAS Institute and Syniti.

We warn that close provider placement proximity should not be taken to imply that the packages evaluated are functionally identical or equally well suited for use by every enterprise or for a specific process. Although there is a high degree of commonality in how enterprises handle data quality, there are many idiosyncrasies and differences in how they do these functions that can make one software provider's offering a better fit than another's for a particular enterprise's needs.

We advise enterprises to assess and evaluate software providers based on organizational requirements and use this research as a supplement to internal evaluation of a provider and products.

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Product Experience

The process of researching products to address an enterprise's needs should be comprehensive. Our Value Index methodology examines Product Experience and how it aligns with an enterprise's life cycle of onboarding, configuration, operations, usage and maintenance. Too often, software providers are not evaluated for the entirety of the product; instead, they are evaluated on market execution and vision of the future, which are flawed since they do not represent an enterprise's requirements but how the provider operates. As more software providers orient to a complete product experience, evaluations will be more robust.

The research results in Product Experience are ranked at 80%, or four-fifths, of the overall rating using the specific underlying weighted category performance. Importance was placed on the categories as follows: Usability (5%), Capability (25%), Reliability (15%), Adaptability (15%) and Manageability (20%). This weighting impacted the resulting overall ratings in this research. Informatica, Oracle and IBM were designated Product Experience Leaders.

Data Quality
Product Experience

Providers	Grade	Performance
Informatica	A-	*Leader* 68.1%
Oracle	A-	*Leader* 65.4%
IBM	B++	*Leader* 64.2%
AWS	B++	62.8%
Experian	B++	61.8%
Google Cloud	B+	59.6%
Actian	B+	58.4%
Huawei Cloud	B+	57.8%
Alation	B+	57.7%
Alibaba Cloud	B+	57.1%
Collibra	B+	55.9%
Qlik	B	53.5%
Cloud Software Group	B-	50.0%
Precisely	B-	48.8%
SAS Institute	B-	47.1%
Quest Software	B-	46.9%
Ataccama	B-	46.1%
Reltio	B-	46.0%
Syniti	B-	45.1%
Melissa Data	C	35.0%

Source: ISG Research
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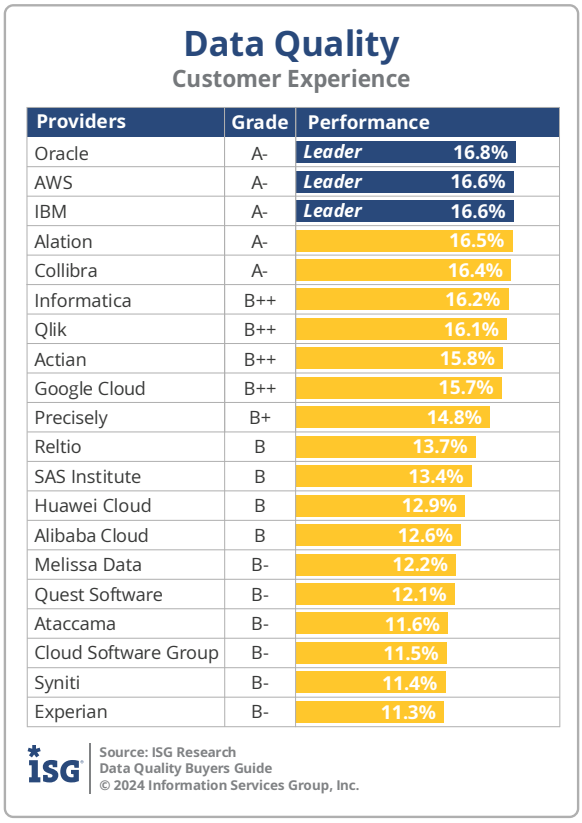
Many enterprises will only evaluate capabilities for workers in IT or administration, but the research identified the criticality of Usability (5% weighting) across a broader set of usage personas that should participate in data quality.

Customer Experience

The importance of a customer relationship with a software provider is essential to the actual success of the products and technology. The advancement of the Customer Experience and the entire life cycle an enterprise has with its software provider is critical for ensuring satisfaction in working with that provider. Technology providers that have chief customer officers are more likely to have greater investments in the customer relationship and focus more on their success. These leaders also need to take responsibility for ensuring this commitment is made abundantly clear on the website and in the buying process and customer journey.

The research results in Customer Experience are ranked at 20%, or one-fifth, using the specific underlying weighted category performance as it relates to the framework of commitment and value to the software provider-customer relationship. The two evaluation categories are Validation (10%) and TCO/ROI (10%), which are weighted to represent their importance to the overall research.

The software providers that evaluated the highest overall in the aggregated and weighted Customer Experience categories are Oracle, AWS and IBM. These category Leaders best communicate commitment and dedication to customer needs. While not a Leader, Alation was also found to meet a broad range of enterprise customer experience requirements.



Some software providers we evaluated did not have sufficient information available through their website and presentations. While several have customer case studies to promote success, others lack depth in articulating their commitment to customer experience and an enterprise's data quality journey. As the commitment to a software provider is a continuous investment, the importance of supporting customer experience in a holistic evaluation should be included and not underestimated.

Appendix: Software Provider Inclusion

For inclusion in the ISG Buyers Guide™ for Data Quality Buyers Guide in 2024, a software provider must be in good standing financially and ethically; have at least $50 million in annual or projected revenue, verified using independent sources; sell products and provide support on at least two continents; and have at least 50 customers. The principal source of the relevant business unit's revenue must be software-related, and there must have been at least one major software release in the last 12 months.

Data quality is both a discipline and a product category. As a discipline, data quality refers to the processes, methods and tools used to measure the suitability of a dataset for a specific purpose. The precise measure of suitability will depend on the individual use case, but important characteristics include accuracy, completeness, consistency, timeliness and validity. The data quality product category is comprised of the tools used to evaluate data in relation to these characteristics.

To be included in this Buyers Guide requires functionality that addresses the following sections of the capabilities document:

- Configuration
- Data profiling
- Data quality rules
- Data quality insights
- AI

The research is designed to be independent of the specifics of software provider packaging and pricing. To represent the real-world environment in which businesses operate, we include providers that offer suites or packages of products that may include relevant individual modules or applications. If a software provider is actively marketing, selling and developing a product for the general market and it is reflected on the provider's website that the product is within the scope of the research, that provider is automatically evaluated for inclusion.

All software providers that offer relevant data quality products and meet the inclusion requirements were invited to participate in the evaluation process at no cost to them.

Software providers that meet our inclusion criteria but did not completely participate in our Buyers Guide were assessed solely on publicly available information. As this could have a significant impact on classification and ratings, we recommend additional scrutiny when evaluating those providers.

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Products Evaluated

Provider	Product Names	Version	Release Month/Year
Actian	Actian Data Quality on Actian Data Platform	May 2024	May 2024
Alation	Alation Data Intelligence Platform	2024.1.5	August 2024
Alibaba Cloud	Alibaba Cloud DataWorks	2024-04	April 2024
Ataccama	Ataccama ONE	15.2.0	May 2024
AWS	AWS Glue Data Quality	August 2024	August 2024
Cloud Software Group	ibi Data Intelligence	1.1.0	July 2024
Collibra	Collibra Data Intelligence Platform	2024.07	July 2024
Experian	Experian Aperture Data Studio	2.14	May 2024
Google Cloud	Google Cloud Dataplex	May 2024	May 2024
Huawei Cloud	Huawei Cloud DataArts Studio	June 2024	June 2024
IBM	IBM Cloud Pak for Data	5.0	July 2024
Informatica	Informatica Intelligent Data Management Cloud	August 2024	August 2024
Melissa Data	Melissa Unison	3.3.0.4	January 2024
Oracle	Oracle Enterprise Data Quality	12.2.1.4	March 2024
Precisely	Precisely Data Integrity Suite	July 2024	July 2024
Qlik	Qlik Talend Data Fabric	R2024-07	July 2024
Quest Software	Quest erwin Data Intelligence	13.2	January 2024
Reltio	Reltio Connected Data Platform	2024.2.7.0	August 2024
SAS Institute	SAS Data Quality	2024.08	August 2024

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Syniti	Syniti Knowledge Platform	August 2024	August 2024

Providers of Promise

We did not include software providers that, as a result of our research and analysis, did not satisfy the criteria for inclusion in this Buyers Guide. These are listed below as "Providers of Promise."

Provider	Product	Annual Revenue >$50M	Operates in 2 Countries	At Least 50 Customers	Documentation
Ab Initio	Ab Initio	Yes	Yes	Yes	No
Anomalo	Anomalo	No	Yes	No	Yes
Alex Solutions	Alex	No	Yes	Yes	Yes
Datameer	Datameer Cloud	No	Yes	Yes	Yes
Innovative Systems	Enlighten Profiler, Enlighten Cleanse, Enlighten Match, Enlighten Transform	No	Yes	Yes	Yes
Irion	Irion EDM	No	Yes	Yes	Yes
MIOsoft	MIOvantage	No	Yes	No	Yes
Nexla	Nexla	No	Yes	No	Yes
OvalEdge	OvalEdge	No	Yes	Yes	Yes
PiLog	Master Data Record Manager, Data Quality HUB	No	Yes	Yes	Yes
Profisee	Profisee	No	Yes	Yes	Yes

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RightData	DataMarket, DataTrust, DataFactory	No	Yes	Yes	Yes
Safe Software	FME Platform	No	Yes	Yes	Yes
TimeXtender	TimeXtender	No	Yes	No	Yes
Tresata	Tresata	No	Yes	No	Yes
Wiiisdom	Wiiisdom Ops	No	Yes	No	Yes
Zeenea	Zeenea Data Discovery Platform	No	Yes	No	Yes

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About ISG Software Research

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