

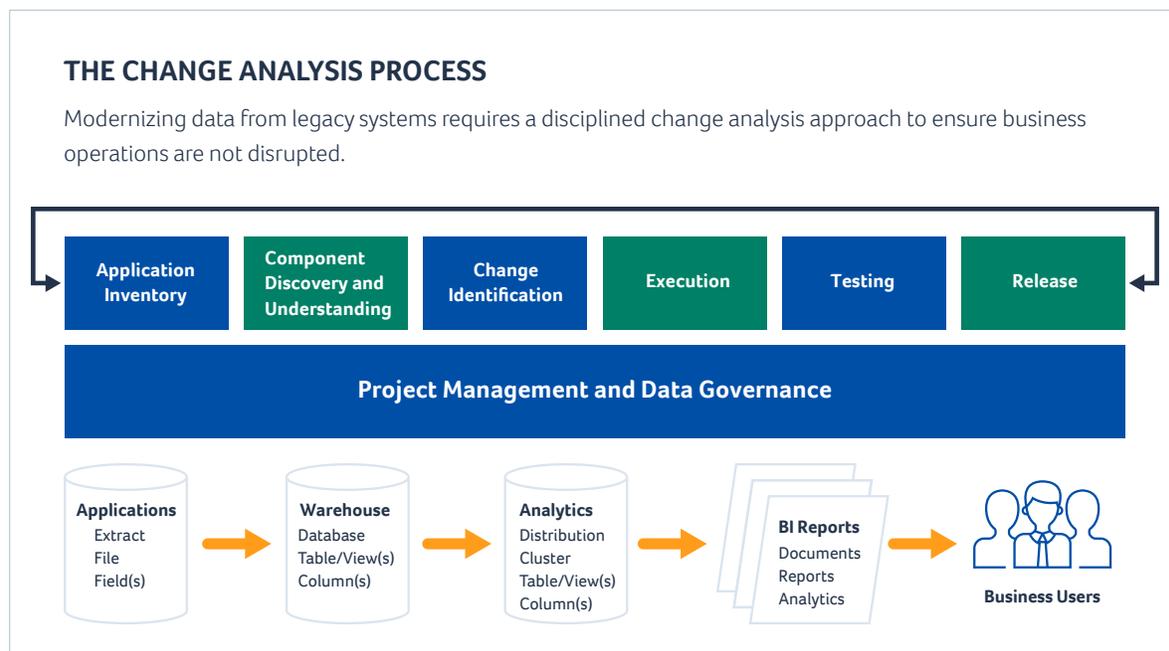


**STREAMLINE CLOUD MIGRATIONS  
AND LEGACY APPLICATION  
MODERNIZATION**

## DEMYSTIFY MAINFRAME DATA AND APPLICATIONS WITH ASG DATA INTELLIGENCE

Cloud accelerates digital transformation and business agility outcomes. Getting to the cloud demands your enterprise modernize application stacks built on legacy, inflexible, often unsupported and costly on-premises data and systems.

Today's fast-changing economic environment demands modernization efforts be done rapidly and with minimal risk to business operations. Successful, risk-free modernization must begin by understanding the breadth and depth of your legacy data landscape. You need to know how your data changes and connects between applications to foresee how changes to data will impact applications and systems. You need to embrace a Change Analysis process that automates discovery of how data is generated, stored and used across the enterprise.



Source: ASG Technologies

## TRANSFORM WITH ASG DATA INTELLIGENCE

ASG-Data Intelligence (ASG DI) delivers these needed insights into data and applications *before* you begin your modernization initiatives. ASG DI shows how data moves through the organization to model impacts and estimate the scale of impactful changes, such as consolidation. ASG DI also identifies data that isn't being used, enabling smarter, targeted modernization, including selecting data for movement to the cloud.

As a metadata-based platform for data management and governance, ASG DI addresses data audits, inventory, catalog and lineage. ASG DI also automates impact analysis, reference data management and regulatory compliance.

## INVENTORY YOUR AS-IS ENVIRONMENT

For most enterprises, the process of modernizing applications and moving to the cloud is an evolutionary, multi-year endeavor. Careful planning is needed to determine the best path forward for each application.

Even a “single” application traverses your IT landscape across one or many custom-written program components, along with the supporting infrastructure, application middleware, middleware services, and other components that comprise the complete solution. The solution is likely to be distributed over several computers for component re-use or performance. It may also be divided across multiple geographical regions, operating systems or computing architectures.

To understand your IT landscape, you will need to catalog and analyze all applications, languages, databases, networks, platforms, and processes in your environment. With this knowledge, you can smartly assess the scope and complexity of migrations to guide your planning and prioritization. You can perform an impact analysis to understand where every critical data element resides in the landscape from the source to the reports and applications that consume them. You’ll also gain awareness of the transformations and a map of how the data travels to clearly understand data dependencies.

## VISUALLY MAP DEPENDENCIES WITH DATA LINEAGE

Data lineage is the key to understanding the relationships between data items across your enterprise or individual lines of business. The number and diversity of data sources, the overwhelming number of data items and the complexity of applications makes understanding these data relationships a daunting challenge for any business.

Data lineage simplifies this complexity with a dynamic, context-sensitive visual family tree of your data. It provides end-to-end data visibility of critical data elements. This is powerful in understanding the flow of data where it starts or originates, where it gets used, and further downstream where it is manipulated or transformed. It also shows the business logic.

While some lineage teams may try to manually create lineage, it is not practical for most projects. Without automated data lineage, IT teams spend hundreds of hours manually mapping the relationships between the millions of columns stored in a typical enterprise data warehouse. It is a long, tedious process with no guarantee that they will catch everything. IT resources are deployed that could be better used elsewhere and their efforts are already obsolete as soon as the project is finished.

## BENEFITS

- Power up your new environment with well-understood, trusted, and compliant data
- Build a sustainable data management foundation to advance modern data strategies, including analytics, AI, enhanced customer experiences and more
- Plan, scope and manage costs
- Reduce modernization and migration failure risks
- Optimize data flows and remove wasteful ETL processes
- Mitigate data privacy compliance concerns by easily identifying non-compliant data element usage and transformation
- Rationalize obsolete and duplicate applications and data sources
- Improve impact analysis and change management
- Boost productivity and save weeks or months of manual effort

## **AUTOMATE METADATA CAPTURE ACROSS YOUR LEGACY ENVIRONMENT**

ASG DI is the solution you need to automatically extract and catalog metadata from across your disparate legacy systems. It supports 260 technologies – including mainframe platforms, source code, distributed architectures, cloud and big data environments – to document how your applications use and transform information.

With this metadata, ASG DI creates a visual end-to-end view – an interactive lineage diagram – of your IT environment, including code dependencies and complexity. ASG DI automatically maps relationships between data points to show how data moves from system to system and how datasets are sourced, calculated and used. Users can browse the metadata, and drill down into relevant details on demand for intuitive understanding.

ASG DI data lineage uniquely extends beyond strictly documenting data flow. You will also be able to view the application source code in context. Mainframe data commonly goes into a code base (often legacy code like COBOL or Java). ASG has the tools to help manage lineage flow down to the logic within that code base – not just the data. Since code continuously evolves and original developers may have long since retired, this capability will yield tremendous accuracy and time-savings benefits.

With an automated, lineage-first approach, you will streamline and risk-proof any migration or modernization initiative.

## **ANALYZE IMPACTS AND MITIGATE BUSINESS DISRUPTION**

Model impacts and estimate the scale of changes, such as consolidation, before you unplug or move applications. Understand data upstream and downstream impacts that could dramatically impact reports you use to make business decisions and notify application owners and business stakeholders, so they can prepare for the changes.

## **PRIORITIZE APPLICATION MIGRATIONS AND SCOPE**

Data lineage reveals which applications and data are commonly used, as well as the complexity, scope and impacts of changes. With a clear view of application dependencies and components, modernization teams can plan out which applications must be managed together, and which can be updated or migrated on their own, with only the endpoints needing to be changed. Quickly identify high impact or small-but-meaningful applications to start with to prove the value of a new strategy or solution. Understand code complexity at a granular level to inform your strategy.

## **RATIONALIZE DATA BLOAT AND REMOVE COMPLEXITY**

Easily spot unused, redundant and obsolete data and applications with an inventory of application functionality and data elements at a granular level. Streamline migrations; reduce costs, complexity and risks; eliminate unneeded ETL processes; and increase data usage by migrating only content that is trusted, used and protected. In one real-world example, a global financial institution was able to reduce 464 instances of a single field into only 12.

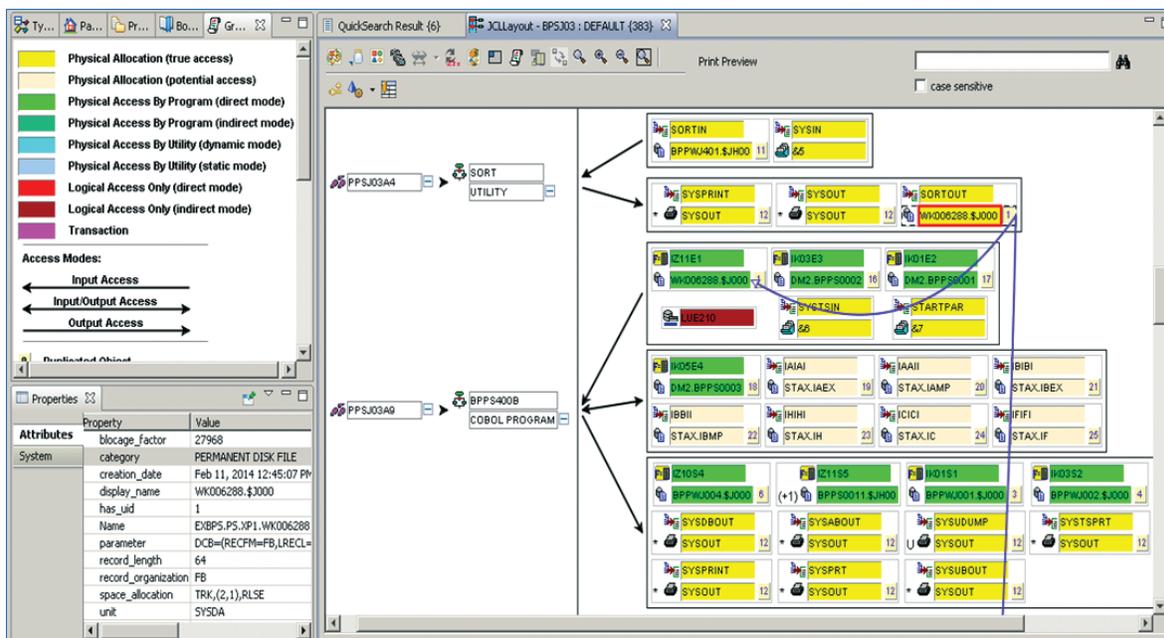
## **MITIGATE COMPLIANCE CONCERNS**

Inspect legacy applications, including mainframe applications, to identify non-compliant data element usage and transformations.

## **AUDIT-READY VIEW OF CHANGES**

Whether addressing issues or responding to auditors, it's crucial to have a view of data flows before and after changes.

## UNDERSTAND AND REUSE APPLICATION SOURCE CODE



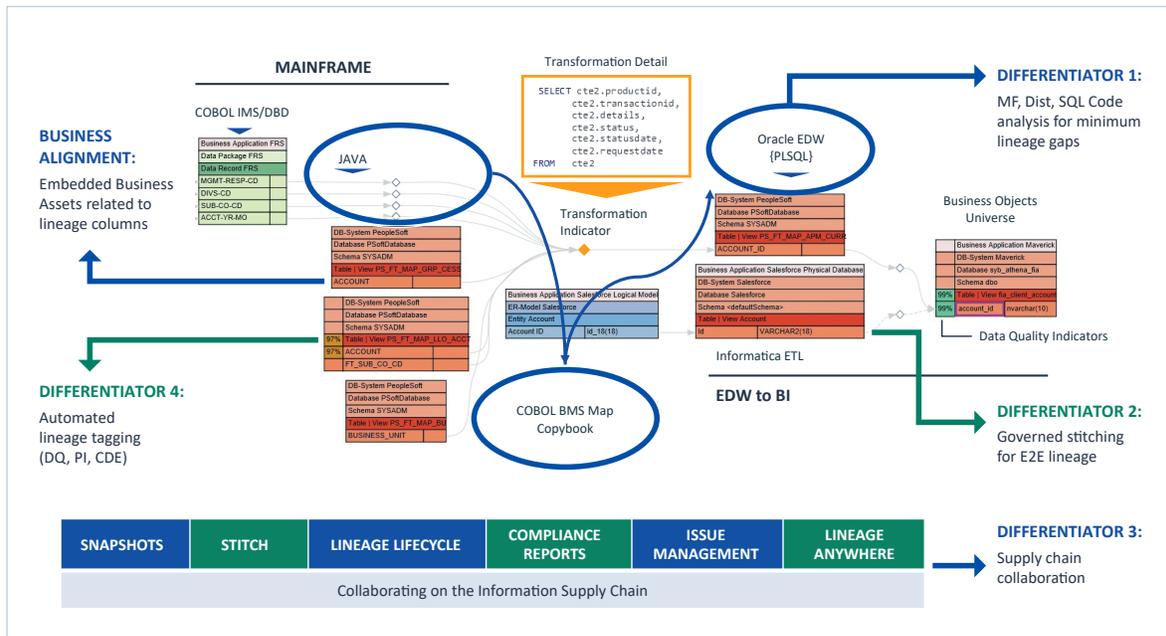
ASG DI reverse engineers code in your legacy application, so IT can spend more time developing and less time on forensics. This JCL Graph is one of many reports available, showing Job Steps and associated Program Executables, File/DB resources, Graph Legend and selected Disk File object Properties. In this example, the red cell indicates that the table referenced in the code has not been scanned.

Your legacy applications contain 30+ years of valuable intellectual property that provides unique competitive advantages. As it evolves over time, code becomes increasingly complex. Re-engineering the application can be an arduous, months-long effort. All too often, valuable intellectual property and competitive advantage is left behind and business risks grow, as IT teams decide it is easier to simply start over from scratch.

ASG streamlines this effort with automated documentation and enables **more complete discovery and understanding of application code portfolios**, regardless of the technologies on which the portfolios are built.

Cross-reference tables, network and pert graphs, structure and flowcharts are available to better understand relationships and dependencies between jobs, transactions, programs, classes, methods, scripts, etc. Identify all code that performs create, read, update or delete actions against specific file and table data, as well as follow the flow of data directly or indirectly through parameter passing and data movement from field to field across the application portfolio.

And rather than address application code portfolio and associated business information needs one application at a time, ASG can help you resolve them **across the entire enterprise**. This granular code-level insight arms IT to find smarter ways to reduce maintenance costs, identify application integration points, assess opportunities for code reuse and address external regulatory requirements and internal control compliance.



IT and business data experts collaborate to enrich the data lineage with business meaning.

## ENRICH TECHNICAL LINEAGE WITH BUSINESS CONTEXT AND PRIVACY CLASSIFICATIONS

ASG DI uniquely ties technical data to business context, ensuring data is meaningful to all enterprise users. The technical lineage is fed into a centralized, browser-based metadata repository where it can be tracked, searched, regularly updated, governed and cataloged for unified access and understanding.

Before data can be moved to the cloud – or even used – it is crucial to protect Personally Identifiable Information (PII) and Sensitive Data to stay compliant with privacy regulations like GDPR and CCPA. With ASG DI, you can automate discovery and reduce manual governance steps across the enterprise infrastructure—identifying personal information, PII and SII—and integrating business terms and regulatory context with data understanding. PII tags will display in the data lineage with optional flags. PII cascading automates PII identification to all downstream data elements in data lineage.

From the ASG DI Business Glossary, your team of experts can also provide business definitions, policies and rules for the data element so that datasets can be easily searched and found by users, along with usage guidelines.

This “business metadata” that your teams build is directly searchable in the Business Glossary or browsable from the data lineage. The combination of a Business Glossary with an enterprise repository connects business assets with IT assets and provides context to find the right data—linking business and technical information and building business alignment and data understanding across the enterprise.

- **Business and data analysts** score and rate datasets and applications based on business value and data element usage to prioritize efforts and scope, ensuring that strategic applications are prioritized, while others are left behind.

- **Information Security** teams tag private and (PII) and sensitive data to operationalize data privacy and maintain compliance with diverse and ever-evolving data privacy laws like GDPR, CCPA and many others.
- **Project Managers** leverage lineage reports and KPI dashboards to track and report upon the project's progress, ensure deadlines are met and that data and application owners are identified and engaged.
- **Chief Data Officers** see a holistic view of the application data discovered, its value and its potential risk to the organization.
- **Compliance and Finance Leaders** inspect the data element to address compliance mandates and attestation of regulatory and internal policies, such as BCBS-239, FRTB, LIBOR, CCAR and MiFID II.
- **Data stewards, owners and business stakeholders** define business terms, policies and rules for critical data elements in the Business Glossary and certify trusted datasets to make data discoverable, meaningful, understood and compliant.
- **IT Leaders, data engineers and architects** inspect the composition and structure of core applications, identifying relationships and dependencies from the usage of data elements. Dashboards provide industry-standard measurements of application size and complexity to support smarter decisions about staffing experience levels needed, maintenance, rationalization and transformation strategies.

## MANAGE AND SUSTAIN INTELLIGENT DATA

Modernization or cloud migrations should never be a do-it-and-forget-it effort, buried in a graveyard of old spreadsheets on your portal to quickly become obsolete and forgotten. Your data and its uses will continue to grow and change over time.

To stay ahead of the changes and become market leaders, organizations need to embrace metadata management as a core component of the transformation into data-driven enterprises. As the original Data Intelligence solution, ASG DI enables your company to automate an evergreen, always reusable foundation of quality, well-understood, "living" data. Your organization becomes agile and future-ready to harness your data for smarter decision-making, disruptive innovation and enhanced customer experiences.

ASG DI provides a framework for operationalizing and sustaining data management. The automated metadata capture and data lineage can be regularly and incrementally updated to always stay current. Ongoing identification, classification and management of personally identifiable and sensitive information will always be needed in your new environment. And business semantics and data quality will need to be updated as data is propagated into new data sets and applications.

Roles-based data governance empowers your organization to continually collaborate to decide what data is valuable, set quality standards, add rules and privacy tags, manage and ensure the resolution of data-related issues and quality problems and safeguard that data is compliant and well-defined. Application owners and other stakeholders can subscribe to be automatically alerted when changes are being made to data elements, so that everyone is working in lock step. Auditable histories and snapshots enable you to quickly "go back in time" to trouble shoot issues and respond to audits and questions with confidence.

Knowledge workers across your organization have a single source of truth to find the data they care about and have full confidence in using that data to drive business decisions. With ASG DI, transactional data is freed from its legacy constraints and transformed into a strategic business asset, agile and always ready to spark innovation and competitive advantage.

## CAPABILITIES

- **Application and source code inspection** – Identify the composition and structure of core applications, including COBOL, and their usage of data elements with reports and in context via the lineage
  - **Application scoring** – Survey stakeholders on application value and performance to help prioritize modernization and migration efforts
  - **Centralized, unified metadata repository** – Support self-service BI with a user-friendly, “single pane of glass” view of enterprise data across disparate applications and technologies
  - **Role-based dashboards and reports** – Understand application and data element interconnectivity
  - **Lineage Stitching** – Fill in gaps for custom environments or indirect connections to assure end-to-end mapping
- **Comprehensive legacy application support** – Discover and inspect data element usage across mainframe, distributed and Cloud technologies and the application code running on them
  - **Business Glossary** – Enrich data lineage with business context, including definitions, policies, rules and PII classification
  - **Impact and change analysis** – Identify and assess impacts of changes to capability and data elements to control risks
  - **Automated Data Lineage** – Technical, application and business lineage to track and trace data movements and transformations across the enterprise from source to the ultimate points of consumption.

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