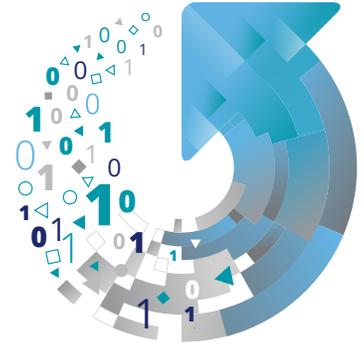




Application Modernization: innoWake™ Mining



Gain deep insight into your legacy systems and business functions



Mining is an automated code-assessment solution within Deloitte's Application Modernization powered by the innoWake™ suite of products. The solution combines our deep business and technology domain knowledge, product automation, and time-tested methodologies to deliver insights into how legacy technology enables business capabilities today—and how modernization can enable the future you imagine.

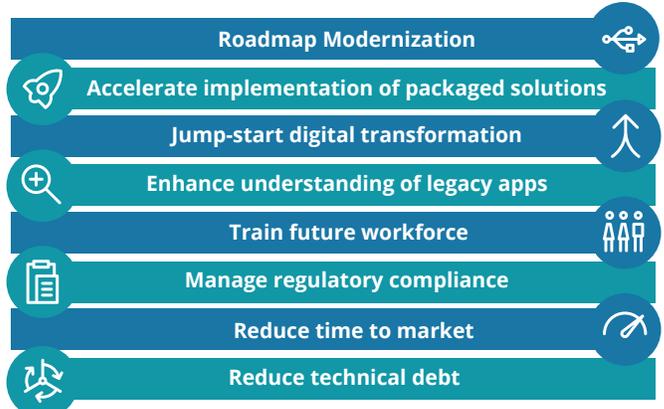
How Mining can help address business needs

- **Create a tailored modernization roadmap:** Guided by industry-leading business experience, Mining analyzes legacy applications to determine code structure and architecture, dependencies, and business rules. This helps create a low-risk, cost-effective modernization roadmap that is aligned with individual business goals.
- **Accelerate the evaluation and implementation of package solutions:** Mining supports the decomposition of the legacy system into functional parts to identify candidates for package solutions and facilitate gap analysis to scope and plan their implementation. When deploying a package solution, Mining automates business rule extraction and evaluates interfaces and data dependencies to speed configuration of the new package solution and help ensure it meets business needs.
- **Jump-start digital transformation:** When planning a digital transformation, it can be difficult to understand the complex dependencies the initiative will have on legacy technologies and to define the legacy modernizations necessary. Unaddressed, these issues can either limit the success of the digital transformation or cause it to fail entirely. Deloitte's Mining solution can help by first decomposing the legacy environment and mapping legacy components to the elements of the digital transformation. This helps define the legacy modernization scope and provides insights into optimal modernization approaches.
- **Enhance legacy system understanding and documentation:** Legacy systems are often updated incrementally over years or even decades, often without documentation. As legacy coders retire, they may take with them years of operational and institutional knowledge that hasn't been formally documented. Deloitte's methodology combines business experience with product automation to

address this gap by documenting legacy system structure, dependencies, and functions. This enables you to:

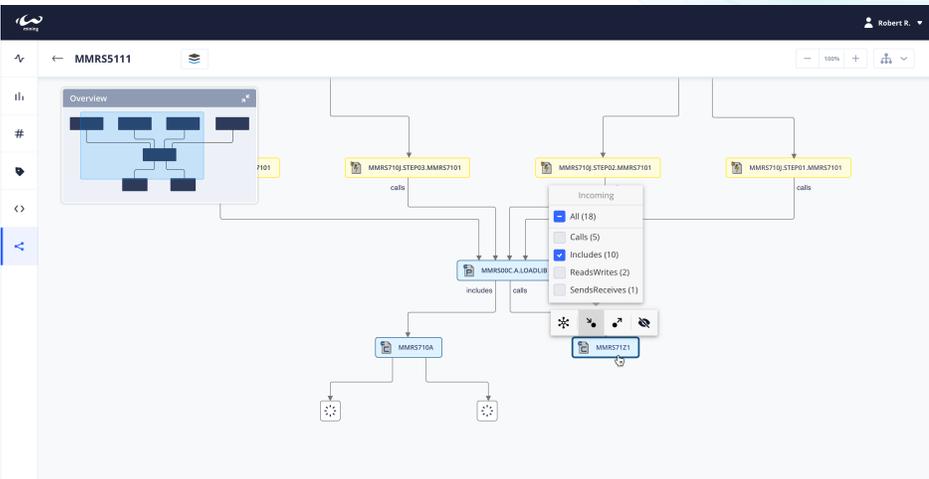
- o **Train future workforce:** Enhancing system documentation democratizes institutional knowledge and supports the onboarding of new staff to operate and maintain legacy systems.
- o **Manage regulatory compliance,** including audit response: Deloitte's Mining solution, combined with our experience in regulatory compliance services, can help you automate compliance controls and develop compliance-management dashboards.
- o **Reduce time to market for new products and services:** Mining helps organizations enhance legacy applications to more quickly develop new products and services by enabling faster impact analysis of planned updates that quickly identify shared code and trace data dependencies.
- **Reduce technical debt:** Uncover opportunities to reduce technical debt and lower operating costs by:
 - o Analyzing data access and interfaces to identify duplicate queries and expose data-layer microservice needs
 - o Identifying redundant and dead code
 - o Using field tracing to understand the data dependencies and flow of hard-coded values to improve maintainability (e.g., moving cost-of-living adjustments to configuration files)
 - o Evaluating batch job sequencing and opportunities for parallelization of batch tasks to optimize performance
 - o Evaluating opportunities to modularize code to enable reusability

Use Cases where innoWake Mining can help



Mining features that help streamline and accelerate modernization

- **Fully automated analysis algorithms** enable code detection and classification, rule candidate identification, call-chain analysis, data lineage, and pattern detection.
- **Interactive web application** provides insight into your legacy application for multiple audiences using interactive dashboards, visualizations, collaborative rules extraction workflow, and source code viewers.
- **Sophisticated IDE** provides syntax highlighting, hyperlinking, outlines, and more for all supported technologies.
- **Business process mapping** uses a taxonomy-based approach to identify business processes and map them to your code.
- **Business rule mining** provides a collaborative workflow for identification, validation, and extraction of business rules via IDE.
- **Data dictionary** performs automated rules candidate identification and translation of code variables to simple English.
- **Graph-based analysis visualizations** of call-chains and control flows help drive insights into system dependencies and highlight relationships between components.
- **Field tracing and data lineage** track the use of variables across the code and support lineage analysis of fields, files, or tables.
- **Pattern recognition** uncovers patterns and similar logic to identify clusters of similar code. Tool-supported cluster analysis helps quickly identify code patterns that are shared inside clusters.
- **Multiple languages and platforms supported** including COBOL, Assembler, PL/I, Natural, C, C++, .NET, and Java.
- **Data model analysis** helps visualize and understand data models and identifies sources, record types, and use of data in the application.



Mining aligns technical details with the business enabling the opportunity to rapidly advance the modernization journey.

Mining gives users the capability to understand technical workflows connecting them to business processes.

Users can analyze and document the structure of individual code modules or entire applications.

The Deloitte difference

Deloitte is a single-source provider for your modernization journey with 25+ years' experience helping clients reach their modernization goals. Deloitte offers skilled practitioners across the globe and multidisciplinary capabilities that include cybersecurity, analytics, regulatory risk, HR transformation, and tax. Our business-driven approach helps clients achieve value from existing—and future—applications.

LEARN MORE

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To learn more about Deloitte's Mining solution, visit:

<http://www.deloitte.com/us/appmod-mining>

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