

The Engineering Leader's Guide to Engineering Document Management Systems for Asset-Intensive Operations

Improve plant performance, reduce risk, and accelerate capital projects

How to Use This Guide

Quick Checklist

Here's how to get the most value from this guide and ensure it supports you effectively throughout your EDMS journey.

1. **Clarify your objectives upfront.** Understand the pain points you want to address and the outcomes you want to achieve so you can focus on what is most relevant.
2. **Apply insights as you progress.** This guide provides tips, steps, or examples that you can apply to your own situation.
3. **Use it as an ongoing reference.** This guide is designed as a resource, not a one-time read. Come back whenever you need to refresh or dig deeper.
4. **Share and align with your team.** Use the guide to facilitate collaboration and alignment across stakeholders for a faster and more effective EDMS implementation.

Topics

What is EDMS?

Pain Points EDMS Addresses

Building a Business Case for EDMS

Best Practices for Implementing EDMS

Why Synergis Adept?

Customer Success Stories

Leveraging EDMS to Power the Digital Future

What is an Engineering Document Management System?

An Engineering Document Management System (EDMS) is a centralized platform that manages, secures, accesses, and controls engineering documents, drawings, 3D models, and technical data to save time, reduce risk, and lower operating costs. An EDMS supports collaboration across engineering, maintenance, operations, capital projects, and construction teams while unifying critical information, ensuring version accuracy, and enforcing governance throughout the document lifecycle. By replacing fragmented file storage and manual processes, an EDMS provides the foundation for consistent, traceable, and efficient engineering workflows.

In asset-intensive industries such as manufacturing, utilities, oil & gas, pharmaceuticals, and mining, EDMS plays a critical role in managing the constant evolution of as-builts and capital plant and facility projects. As equipment is maintained, upgraded, or replaced—and as facilities are expanded or reconfigured—engineering information must be carefully controlled and traceable. EDMS platforms help organizations document and manage these changes with precision, ensuring regulatory compliance, operational safety, and efficient project execution.

A well-implemented EDMS can reduce document retrieval time by up to 80%, cut engineering change cycle times by 30–50%, improve safety and compliance, and lower operating costs through greater document control and increased efficiency. It ensures that teams are always working with accurate, up-to-date information—minimizing risk and supporting better decision-making.

Who Uses an EDMS?

An EDMS delivers value across every role involved in the project and asset lifecycle—from executives to field technicians. While each group has unique priorities, from mitigating risk and ensuring compliance to improving uptime and accelerating delivery, the EDMS serves as a unifying backbone that meets them all. This table outlines how an EDMS addresses key concerns for different personas, what it delivers in practice, and the measurable value it creates across the organization.

Persona	Primary Concern	What EDMS Delivers	Value
CTO	Risk, integration, scalability	Single source of truth, IP protection, foundation for digital transformation	Protects IP, reduce risk, enables digital growth
Engineering	Accuracy, team productivity, project efficiency	Version control, workflow automation, cross-team collaboration, technical accuracy	Keeps projects on track with accurate, approved info
Plant Operations	Safety, uptime, operations efficiency	Quick access to correct documents; safer and more reliable operations	Fewer shutdowns, safer ops, faster access to docs
Capital Projects	Schedules, budgets, stakeholder alignment, costly change orders	Centralized access to all facility as-builts, change management, controlled flows for RFIs, submittals, transmittals	Predictable schedules, controlled costs, confident delivery, easy handover
Maintenance/ Field Service	Uptime, safety, fast data access in the field	Mobile access to latest drawings and procedures; faster fixes, safer crews	Safer crews, faster repairs, fewer delays
Regulatory Compliance	Audit readiness, trace-ability, compliance risk	Audit trails, role-based access, enforced policies, compliance risk reduction, meet standards	Peace of mind: compliance built in, risk reduced, pass audits
Product Design	Product lifecycle, speed to market, quality	Traceability from requirements through release; faster launches; built-in compliance	Faster, cleaner launches with lifecycle traceability
Contractor	Working from latest info, speed, accountability	Centralized platform for submittals and deliverables; proof of work; fewer disputes	Clarity, speed, and accountability in project delivery without delays
Construction	Working from latest info, speed, alignment, accountability	Version control, access & collaboration, traceability & accountability, workflow automation	Reduced risk, fewer delays, less rework on construction projects

Key Advantages of an EDMS

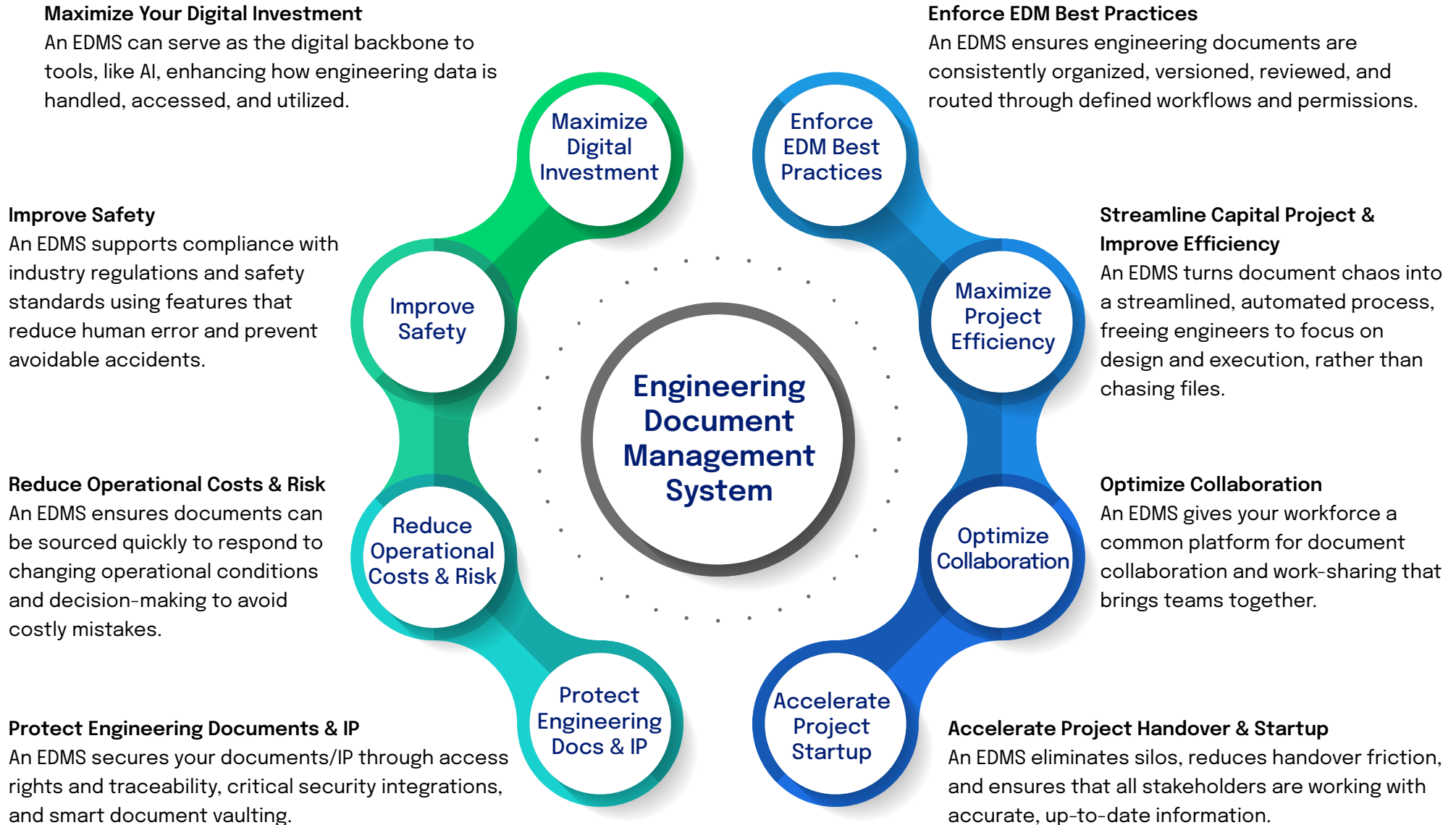
While an EDMS supports general document management for any department, it addresses the specialized requirements for managing engineering information in complex facility or product environments. An EDMS delivers the precision, traceability, and efficiency that is required through these capabilities:

- Controlled access to critical documents
- Robust version control
- Tight integration with CAD applications
- Management of complex CAD file relationships
- Visualization and markup of engineering drawings and models
- Workflow automation
- Extensive traceability and consistency of project data
- Granular document access control and security of intellectual property

Business Value Benefits of an EDMS

An EDMS delivers measurable business value by bringing control, efficiency, and intelligence to how engineering information is managed. Beyond simply storing documents, an EDMS connects people, processes, and data—enabling better collaboration, compliance, and decision-making across the project and asset lifecycle. The benefits extend from reducing risk and operational costs to accelerating project delivery and safeguarding critical intellectual property.

Business Value Benefits of an EDMS (cont.)



Measuring and Optimizing the Success of an EDMS

By tracking key performance indicators (KPIs) such as document retrieval time, rework rates, uptime, and project cycle times, organizations can quantify the return on their digital investment. These targets illustrate the measurable outcomes that a well-implemented EDMS can deliver, demonstrating its impact on reducing risk, optimizing workflows, and driving overall business value.

Tip: Start with a manageable implementation of one plant or project, and use early wins as case studies to reinforce organizational confidence and the value case.

KPI	Target Outcome
Document retrieval time	↓ 30–60%
Engineering rework	↓ 25–30%
Maintenance delays due to doc access	↓ 30%
Contractor documentation errors	↓ 50%
Audit findings/document compliance issues	↓ 70%
Operational and compliance risk	↓ 20–30%
Uptime	↑ 15–30%
Faster project start up	↑ 35%
Workforce productivity	↑ 25–30%



Pain Points Addressed by an EDMS

Why Engineering Teams Need Better Document Control

Across industries, engineering organizations face growing pressure to deliver projects faster, safer, and at lower cost—while managing increasingly complex data, systems, and regulatory requirements. Yet many still rely on outdated, disconnected tools that slow collaboration, increase risk, and drive costly rework.

An Engineering Document Management System (EDMS) addresses these challenges by transforming how engineering information is governed, shared, and used across the organization. The following pain points represent the most common barriers to performance—and the areas where EDMS delivers measurable business value, from improved safety and compliance to higher efficiency, reliability, and project ROI.

Common challenges include:

- No established document control
- Wasted time searching for data
- Manual workflows and approval processes
- Ineffective collaboration
- Inefficient CAD file management
- High risk of safety incidents
- Capital project delays
- Handover delays and poor data quality
- Excessive rework and scrap
- High equipment downtime
- Regulatory compliance risk
- Inadequate data and document security
- Loss of expert knowledge and skills

Pain Point: Lack of Formal Document Control

Legacy tools such as Windows Explorer and SharePoint are not designed to manage the complexity of engineering documentation, particularly CAD files and their interdependencies. The absence of structured metadata and robust version control makes locating accurate information time-consuming and increases the risk of using outdated or incorrect files. Additionally, without defined workflows, audit trails, and granular permission controls, document management at scale becomes disorganized, error-prone, and exposes the organization to operational and compliance risk.

An EDMS:

- Provides a centralized foundation for disciplined document control, ensuring engineering documents are consistently organized, versioned, reviewed, and routed through standardized workflows.
- Enforces role-based access, preserves data integrity, and delivers complete auditability to support compliance and accountability.
- Replaces manual, ad hoc processes with controlled, repeatable practices, reducing risk and human error

Without an EDMS, organizations expose themselves to information sprawl, data integrity issues, unauthorized access, and avoidable errors that erode operational efficiency and safety.

EDMS Business Value



Pain Point: Time Lost Searching for Information

Industry research indicates that workers spend an average of 2.5 hours per day searching for data—often more for contractors due to remote work conditions, restricted access, and project-specific documentation requirements. When teams lack timely access to accurate documents and data, productivity suffers. The result is project delays, rework, costly change orders, increased risk of errors, inefficient communication, and ultimately schedule and cost overruns.

Save 30% of a knowledge worker's day currently spent searching for information. An EDMS also reduces rework recreating lost or outdated files.

An EDMS:

- Provides a centralized repository for all engineering documents, drawings, and related data, enabling consistent organization, categorization, access, and control.
- Enables fast, reliable retrieval through full-text and metadata-driven search, ensuring critical information is available when needed—whether in the office or the field.
- Enforces version control so teams always work from the latest approved documents, reducing safety risks, rework, scrap, and compliance issues. and wasted effort.
- Preserves institutional knowledge, supporting future projects and effective knowledge transfer.

EDMS Business Value



Pain Point: Manual Workflows & Approval Processes are Time Consuming and Prone to Error

Manual, email-driven, and paper-based document workflows are inherently slow, opaque, and difficult to manage. Each handoff relies on individual follow-through, making processes vulnerable to delays, missed approvals, and lost context. Without automated routing, time-based alerts, and real-time status visibility, approvals stall unnoticed, bottlenecks persist, and teams lose confidence in whether documents are current, reviewed, or approved. These inefficiencies compound over time, increasing risk, rework, and schedule slippage.

EDMS replaces paper trails, email chains, and spreadsheets with automated, rule-based digital workflows that route documents to the right stakeholders instantly.

An EDMS

- Replaces paper trails, email chains, and spreadsheets with automated, rule-based digital workflows that route documents to the right stakeholders instantly.
- Supports parallel reviews, notifications, and real-time status tracking to accelerate approval cycles and eliminate bottlenecks.
- Enforces version control and captures every action in a complete audit trail, ensuring teams work from the latest approved, compliant documents.
- Reduces human error while improving accuracy, accountability, and integration with design and engineering tools.

EDMS Business Value

Enforce
EDM Best
Practices

Maximize
Project
Efficiency

Accelerate
Project
Startup

Pain Point: Ineffective Collaboration

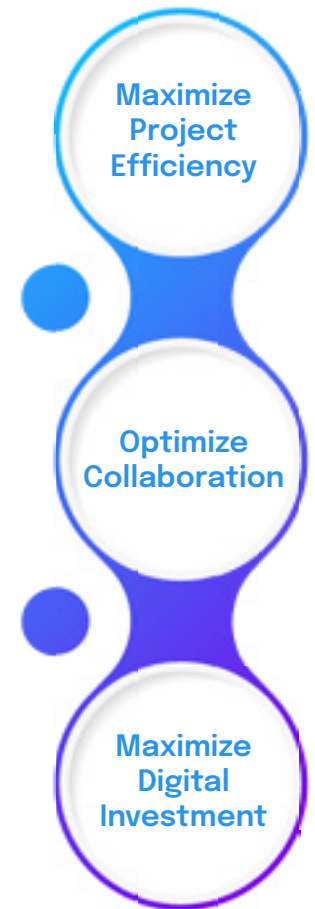
Managing engineering documentation in an active plant or facility is inherently complex. Maintenance and operations teams require immediate access to accurate as-built drawings and equipment documentation, while project and construction teams simultaneously introduce changes. As documents pass between multiple contributors, they are frequently duplicated, edited in parallel, and stored in disconnected locations. This creates confusion over which version is current, forces manual consolidation of changes, and increases the risk of teams working from outdated information. The result is slower execution, misalignment across teams, and reduced productivity.

An EDMS provides a shared collaboration platform where documents move through controlled, automated processes, keeping all contributors aligned.

An EDMS helps:

- Uses time-based alerts, notifications, and status visibility to surface bottlenecks early and keep work progressing on schedule.
- Ensures easy access to the latest approved document versions, reducing safety and reliability risks, rework, change orders, and compliance issues.
- Enables personnel in the plant or field to find, view, and mark up drawings, models, specifications, and related documents—without relying on copies or manual handoffs.

EDMS Business Value



Pain Point: Inefficient CAD File Management

Engineering organizations often rely on multiple CAD platforms—such as AutoCAD, MicroStation, SOLIDWORKS, and Inventor—each with proprietary formats and reference methods. Without a CAD-aware EDMS, critical relationships between models, drawings, and assemblies are easily broken, making it difficult to understand the downstream impact of design changes. This issue is compounded when organizations use multiple CAD systems alongside tools from other disciplines and external partners. EDMS solutions tied to a single CAD vendor typically support their own formats well but create silos when managing others.

Not all EDMS solutions are equal. The most effective platforms support multiple mainstream CAD systems consistently, with proven customer deployments to demonstrate success.

- Manages and preserves complex CAD file relationships—including AutoCAD XREFs and SOLIDWORKS and Inventor parts, assemblies, drawings, and configurations—through check-in/out, copy, rename, and workflow processes.
- Provides where-used and composed-of visibility so the impact of any change is immediately clear.
- Synchronizes CAD properties with EDMS metadata to eliminate redundant data entry and support search, reporting, and controlled updates back to CAD files.

Pain Point: High Risk of Safety Incidents

In complex, high-risk environments such as chemical plants, refineries, and utility facilities, effective document management is not just a matter of efficiency—it's a life-critical necessity. If someone follows an outdated procedure or references an unapproved drawing, the result can be catastrophic—ranging from equipment failure to environmental incidents, or even loss of life.

An EDMS mitigates these risks by:

- Ensuring that only the latest, approved documents are accessible
- Enforcing strict version control, access permissions, and review workflows.
- Meeting compliance with industry regulations and safety standards via traceability and ensuring that changes are reviewed and documented.

By embedding document control into daily operations, an EDMS helps to create a culture of safety, reduce human error, and prevent avoidable accidents.

EDMS Business Value



Pain Point: Capital Projects Delays

Capital engineering projects tied to revenue-generating assets are mission-critical. While early completion delivers measurable financial upside, delays frequently occur when information, people, and processes fall out of alignment. Common causes include outdated or hard-to-access as-builts; fragmented control of drawings, specifications, submittals, and revisions; and overlapping projects competing for shared resources. These conditions slow approvals, create version confusion, and drive rework.

Given the scale and complexity of capital projects, EDMS ensures even the most minor inefficiency doesn't compound into significant cost and schedule impacts.

In complex plant environments, an EDMS helps keep projects on track by ensuring:

- High data integrity across all project documentation.
- Digital synchronization between engineering, field, and operations teams.
- Structured collaboration between contractors and internal stakeholders through controlled workflows.
- Faster, safer, and compliant project execution—with continuity into operations.

Pain Point: Handover Delays and Data Quality Issues

At project closeout, the transition from construction to operations is a critical inflection point in the asset lifecycle. Too often, this handover is delayed because engineering documentation, drawings, and asset data are incomplete, inconsistent, or fragmented across multiple systems. These deficiencies slow commissioning, delay regulatory approvals, and postpone the start of safe, reliable operations. When engineering data contains errors, duplicates, or gaps, it undermines confidence in the information that operations and maintenance teams rely on—driving rework, increasing lifecycle costs, and introducing operational and safety risk.

Establishes a single, authoritative source of truth for asset documentation, ensuring drawings, models, and records are complete, validated, and ready at turnover.

An EDMS:

- Enables a smoother, faster transition from construction to operations by maintaining continuity of data across project phases.
- Improves long-term data quality through controlled versioning, metadata standards, and validation rules that persist beyond project closeout.
- Provides operations and maintenance teams with trusted, accurate information to support decision-making, compliance, and ongoing asset performance.

EDMS Business Value



Pain Point: Excessive Rework and Scrap

Rework and scrap represent avoidable costs driven by poor information control. When field engineers and contractors do not have immediate access to current, approved documents, work is delayed, duplicated, or executed incorrectly. Teams may unknowingly rely on outdated drawings or incomplete data, resulting in change orders, material waste, and rework that should not occur. These preventable inefficiencies erode margins, disrupt schedules, and increase safety and compliance risk.

An EDMS eliminates excessive rework and scrap by ensuring teams always access the correct, current, and approved engineering documents, preventing costly errors, production mistakes, and rework.

An EDMS:

- Ensures controlled, reliable data exchange between engineering and field teams so work is executed correctly the first time.
- Provides real-time access to the latest approved documents, enabling faster decisions and reducing errors, rework, and scrap.
- Maintains a secure, centralized repository with full traceability, eliminating document loss, duplication, and non-value-added work

Pain Point: High Equipment Downtime

During critical malfunctions or unplanned outages, manufacturing and maintenance teams need immediate access to accurate, up-to-date documentation. Delays caused by missing, outdated, or inaccessible information prolong downtime, increase safety risk, and slow recovery. At the same time, regulatory and industry standards require organizations to demonstrate effective document control, data integrity, and traceability—capabilities that are difficult to achieve with fragmented or manual systems.

For maintenance teams, an EDMS delivers:

- Safer crews and faster repairs by ensuring the correct procedures, drawings, and manuals are always available.
- Mobile access to documents in the field—including remote locations—eliminating trips back to the office or control room to verify information.
- Improved asset performance and profitability through reduced downtime, less rework, fewer contractor disputes, and faster execution.

Industry research from Gartner indicates that organizations adopting mature document management and knowledge-sharing practices can reduce equipment downtime by 15–30%.

EDMS Business Value



Pain Point: Regulatory Non-Compliance

Organizations must meet a wide range of safety, environmental, and local regulatory requirements, yet fragmented documentation and manual tracking increase the risk of non-compliance. Inaccurate, incomplete, or untraceable records can lead to audit findings, fines, and operational disruption. Depending on industry and company size, the risk of a product- or project-related compliance failure can reach 30%, with average non-compliance costs exceeding \$14.8 million—driving manufacturers to invest millions annually in compliance and audit activities simply to maintain control.

By centralizing safety protocols, testing procedures, and incident records in an EDMS, teams can quickly verify compliance and respond to regulatory requirements.

- Automates the tracking and organization of compliance-related documents.
- Maintains complete audit trails for all documents, capturing every change, approval, and revision.
- Supports compliant reporting and publishing aligned with local and industry-specific regulatory requirements.

Pain Point: Lack of Data & Document Security

Organizations hold highly valuable intellectual property within product formulas, engineering designs, and manufacturing processes—making them prime targets for data theft. The risk of a data breach, including IP loss, is estimated to be as high as 81%. Competitive pressures and globally distributed supply chains further increase exposure to insider threats, cyber espionage, physical theft of designs or prototypes, and unauthorized access to sensitive information. Without controlled access and traceability, organizations struggle to protect their most critical assets.

With controlled access and traceability, an EDMS can protect your most critical assets and reduce data theft risk.

An EDMS:

- Enforces role-based access control with SSO authentication to ensure only authorized users can view or modify sensitive information.
- Secures data both at rest and in transit to protect against interception, leakage, or tampering.
- Tracks all document activity to support accountability, auditing, and compliance.
- Provides secure backup and recovery to protect against data loss, corruption, cyberattacks, or disaster events.

EDMS Business Value



Pain Point: Loss of Expert Knowledge and Skills

As experienced employees retire or transition roles, organizations face significant knowledge loss. A 2018 PwC survey found that 60% of companies struggle with effective knowledge transfer. Without structured systems, critical expertise, best practices, and operational context leave with the workforce—slowing onboarding, increasing errors, and reducing organizational resilience.

While 74% of organizations lack a formal process to capture and transfer institutional knowledge, an EDMS offers a centralized searchable system in which to document processes, SOPs, best practices, and protocols.

An EDMS:

- Maintains and distributes training materials and manuals efficiently, supporting smoother transitions across roles, teams, and projects.
- Preserves institutional knowledge over time, accelerating onboarding and reducing dependency on individual expertise.

Building a Business Case for EDMS



Building the Business Case for EDMS

Building a business case for an EDMS starts with quantifying the real cost of inefficiency, risk, and inaction. Across engineering, capital projects, and operations, unstructured and disconnected information drives lost productivity, rework, downtime, and regulatory exposure. An EDMS changes this dynamic by establishing a secure, controlled system of record for engineering and asset data. The result is measurable ROI—faster project execution, reduced rework, improved audit readiness, and stronger asset performance—while creating a trusted data foundation for AI, predictive maintenance, and Industry 4.0 initiatives.



Quantify the Cost of Inaction

Doing nothing carries measurable cost—lost productivity, rework, downtime, safety risk, compliance exposure, and delayed revenue.



Measure EDMS Core Value

An EDMS reduces waste, lowers risk, and improves decision-making through controlled data, automation, and visibility.



Extend EDMS Strategically

Beyond efficiency, EDMS becomes the digital foundation for AI, predictive maintenance, and Industry 4.0 initiatives

EDMS transforms data chaos into digital control.

Quantifying the Cost of Inaction

- 30% of a knowledge worker's day spent searching for information
- \$270K in rework recreating lost or outdated files
- \$1.5M+ per project from delayed startups
- \$14.8M per incident in average compliance failure costs
- 15-30% higher downtime without controlled engineering data

What an EDMS Changes

- Instant access to the right document from anywhere
- Centralized, authoritative source of truth for engineering data
- Enforced version control, compliance, and audit trails
- Automated workflows for reviews and approvals
- Secure access and IP protection
- Integration with CAD, CMMS, ERP, IoT systems

Quantifying EDMS Core Value Levers

Quantifying the impact of an EDMS exposes both the hidden cost of inefficiency and the measurable return of digital control. The value levers below translate operational challenges—downtime, rework, compliance risk, and project delays—into tangible financial outcomes. Each lever shows how EDMS converts lost time and unmanaged risk into performance gains, cost savings, and operational resilience across the enterprise.

Improve Operational Efficiency, Safety & Uptime

- 15–30% less unplanned downtime
- 5% less rework and scrap
- 20–30% fewer human-error incidents
- Mobile access eliminates wasted trips
- Improved asset performance and uptime

Impact:

Avoided downtime delivers substantial cost savings—often reaching millions.

Faster Capital Projects & Easier Handover

- Faster startup and earlier revenue
- Digital alignment across field and operations
- Eliminates handover delays and missing as-builts
- 15% shorter commissioning cycles

Impact:

Every day sooner to revenue is a day of profit recovered.

Protect Intellectual Property & Ensure Traceability

- Role-based access protects sensitive engineering data
- Encryption secures documents at rest and in transit
- Full document traceability and audit logging
- Controlled access across partners and suppliers

Impact:

With an 81% chance of an IP theft incident, and average IP theft cost of \$4.9M, your engineering data is worth protecting.

Compliance & Audit Readiness

- Drive standards throughout the company
- Enforced version control and document traceability
- Complete audit trails for all changes
- Instant access to approved documents
- Streamlined regulatory submissions

Impact:

With a 30% annual likelihood of a compliance incident, an EDMS makes you always audit-ready. No surprises.

Value Lever: Reduced Time Spent Searching for Information

Industry research from IDC and McKinsey shows that knowledge workers spend 20–30% of their time searching for information. To keep this estimate conservative, assume knowledge workers spend just 5% of their time searching for documents today, and that an EDMS reduces this to 2% through centralized access, metadata, and search.

To quantify the impact, consider:

- The number of knowledge workers who require daily access to documents
- The time spent searching for information and the fully loaded cost of that time
- This estimate assumes the required document is eventually found. It does not include the additional cost of recreating lost or outdated files, making the result intentionally conservative

Example Scenario

*Feel free to plug in your own values**

350	# knowledge workers needing regular access to documents
170	Total work hours per month per person
59,500	Total work hours per month
5%	% of hours/month searching for information
2,975	Total hours wasted per month searching for information
2%	% of hours/month searching for info when using Adept
1,190	Total hours spent searching for files per month using Adept
1,785	Hours saved with Adept
\$200	Per hour Opportunity Cost per person
\$4,284,000	ANNUAL SAVINGS WITH ADEPT*

*Every customer is different, with its own unique challenges, opportunities, and scale. The goal here is to provide basic ideas on how you can quantify the potential value of an EDMS in your unique organization. The calculators are meant to get you started and are not a guarantee of results. Feel free to drop them into a spreadsheet and plug in your own values.

Value Lever: Accelerate Project Startup

Completing capital engineering projects sooner allows assets to generate revenue earlier while reducing project-related costs. An EDMS improves alignment across engineering, project, and operations teams, reduces change orders, and streamlines handover—shortening the time from mechanical completion to productive operation.

To quantify the impact, consider:

- Typical startup or commissioning duration and the daily cost of delay (lost revenue per day).
- Time lost during handover due to missing, inconsistent, or incomplete as-built documentation.
- The financial impact of reducing commissioning time by 15%, enabling revenue to begin that much earlier.

This example assumes a conservative risk reduction of just 2%. While the focus here is accelerated revenue realization, additional benefits include cost savings from reduced rework, fewer delays, and smoother transition into operations.

Example Scenario

*Feel free to plug in your own values**

12	Average duration of a capital engineering project (months)
2%	Percent reduction in months with Adept
11.76	Average duration of a project (months) when using Adept
0.24	Project Acceleration (months)
7.2	Avg # days plant or facility is operational faster by using Adept
\$350,000	Revenue generated per day the plant or facility is operational
2,520,000	Increased revenue per project
2	Number of projects completed per year
\$5,040,000	ANNUAL INCREASED REVENUE WITH ADEPT*

Value Lever: Protect Intellectual Property

Engineering documentation contains critical intellectual property that directly affects competitive advantage, safety, and regulatory standing. An EDMS reduces the risk of IP theft and cybercrime by enforcing secure data handling—protecting information at rest, in transit, and in use—while providing granular access controls, full traceability, and visibility into unusual or unauthorized activity.

To quantify the impact, consider:

- How access to sensitive documents is currently controlled across internal teams and external contractors.
- The business impact if a critical engineering file were lost, stolen, corrupted, or exposed.
- The reduction in legal, regulatory, and operational risk enabled by improved traceability and audit logs.

This example assumes a conservative 10% reduction in the risk of IP theft or cybercrime through EDMS controls.

Example Scenario

*Feel free to plug in your own values**

15%	Estimated risk of a data theft incidents, including IP
\$4,880,000	Average cost of data theft incidents, including IP
\$732,000	Total annual risk
5%	Estimated risk if using Adept
\$244,000	Total annual risk with Adept
\$488,000	ANNUAL REDUCED RISK WITH ADEPT*

Value Lever: Reduce Compliance Risk

The average cost of non-compliance is approximately \$15M per incident, while large organizations spend an estimated \$5.5M annually to maintain compliance. These costs include investments in data security, compliance platforms, incident response, and audits. An EDMS helps simplify compliance by enforcing data integrity, automating document control best practices, and maintaining complete audit trails—improving traceability and accelerating audit response.

To quantify the impact, consider:

- How frequently regulatory audits occur and the time required to prepare today.
- How document revisions, approvals, and audit trails are currently tracked.
- The effect of real-time traceability and automated reporting on audit readiness and response time.

Example 1 assumes a conservative 5% reduction in annual compliance risk.

Example 2 demonstrates efficiency gains that reduce audit effort, time, and cost.

Example Scenario

*Feel free to plug in your own values**

15%	Estimated annual risk of a regulatory compliance issue
\$15,000,000	Average cost of a compliance issue
\$2,250,000	Total annual risk
10%	Estimated annual risk with Adept
\$1,500,000	Total annual risk with Adept
\$750,000	ANNUAL REDUCED RISK WITH ADEPT*

Example Scenario

*Feel free to plug in your own values**

\$5,500,000	Current total investment in regulatory compliance and audits
10%	Percent efficiency gain in compliance and audits with Adept
\$550,000	ANNUAL EFFICIENCY SAVINGS WITH ADEPT*

Value Lever: Avoid an Unplanned Plant Shutdown or Utility Outage

An EDMS improves data access, control, and integrity, ensuring teams can quickly access accurate information at any time. By enforcing change management and approval workflows, an EDMS helps prevent errors caused by outdated or incorrect documentation—reducing the likelihood of unplanned shutdowns and outages.

To quantify the impact, consider:

- Annual hours of unplanned downtime and the associated cost.
- Time field and maintenance teams spend working with outdated documents or waiting for information.
- The financial impact of reducing unplanned downtime by 15–30%, rework by 5%, and human-error incidents by 20–30%.

This example applies a conservative 2% risk reduction to estimate the value of avoiding an unplanned shutdown or utility outage through improved document control.

Example Scenario

*Feel free to plug in your own values**

32	Average number of hours of unplanned downtime per month
\$250,000	Average hourly cost of a plant shutdown
\$8,000,000	Total monthly cost of downtime
2%	% downtime reduction with Adept
\$160,000	Reduced monthly downtime cost with Adept
\$1,992,000	ANNUAL REDUCED DOWNTIME WITH ADEPT*

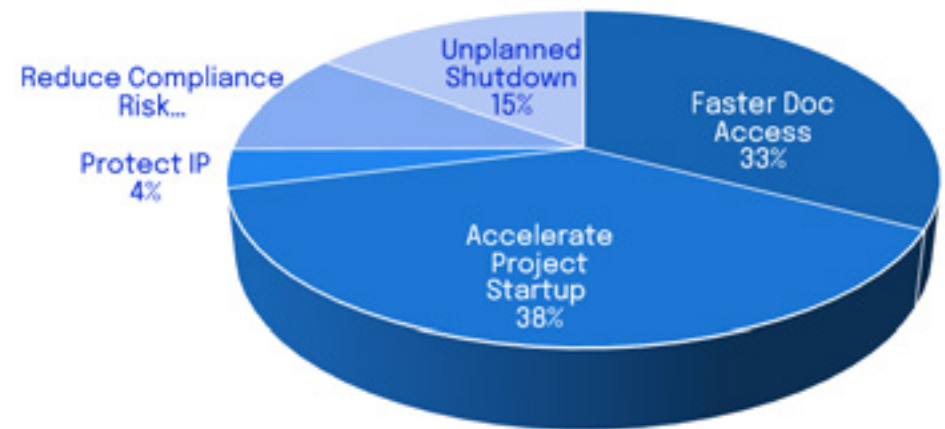
Sum It Up!

Without EDMS	With EDMS	Impact
Engineers spend 20-30% of time searching for data	Instant access to trusted data	\$_____ (your estimate here)
Project mobilization delayed by manual handover	Automated data flow accelerates startup	\$_____ (your estimate here)
Lost or outdated files at turnover	Controlled access protects IP	\$_____ (your estimate here)
Compliance audits slow and risky	Centralized records simplify audits	\$_____ (your estimate here)
Missing documents delay restarts	Access to as-built data reduces downtime	\$_____ (your estimate here)

YEAR 1 ROI → \$_____ (your estimate here)

We encourage you to plug in your own numbers to derive your potential value from Adept. Or if you'd like to meet with our Synergis team to conduct a comprehensive preview based on your data, please contact us at SynergisSoftware.com.

Year 1 ROI



Quantifying Strategic Upside Levers

Additional value from an EDMS emerges when it serves as the digital backbone for AI, predictive maintenance, and system integration. By connecting documentation with operational and enterprise systems, EDMS transforms static information into actionable intelligence—supporting data-driven decisions, predictive insights, and Industry 4.0 initiatives at scale.

Integrating EDMS Across ERP, CMMS & SCADA for Real-Time Intelligence

EDMS-integrated business systems enable faster, data-driven decisions—driving up to 25% improvements in operational efficiency, accuracy, and automation through real-time access to trusted engineering and asset data.

EDMS as the Foundation for AI and Predictive Maintenance

When EDMS provides structured, reliable data to AI and machine-learning models, organizations can reduce unplanned downtime by up to 30% and extend asset life by up to 20% through predictive maintenance and condition-based insights

EDMS as the Engine for Knowledge Retention

EDMS-enabled knowledge capture preserves institutional expertise, reducing onboarding time for new engineers by up to 40% while preventing repeated design, maintenance, and operational errors.

This section highlights the quantifiable strategic upside of EDMS. In the following sections, we explore how integration with ERP, CMMS, and EAM systems delivers these outcomes—and how those connections form the foundation for AI, IoT, and predictive maintenance initiatives.

Best Practices for Implementing EDMS



Laying the Foundation for EDMS Success

Implementing an EDMS is more than a technology upgrade—it's a strategic initiative that transforms how engineering data is controlled, shared, and protected across the enterprise. Success depends on thoughtful planning, stakeholder alignment, and disciplined execution.

This section outlines the key factors, common barriers, and proven best practices that drive a smooth, efficient, and value-driven EDMS implementation—helping organizations achieve faster adoption, stronger compliance, and long-term operational excellence.



Key Factors That Affect Implementation

Before implementing an EDMS, it's important to assess the scope and complexity of the deployment. Factors such as system configuration, data migration, regulatory requirements, and integration needs will directly affect the success of the rollout. A thorough assessment up front helps ensure an efficient, predictable implementation.

The questions below help evaluate organizational scope, document volume and quality, legacy systems, and required integrations with tools such as CAD, BIM, ERP, or PLM.

Ask yourself and your team:

- How complex is the EDMS and what resources are required?
- What is the scope of the implementation (sites, departments, use cases)?
- How many documents need to be migrated?
- Are duplicate or obsolete documents present?
- Is there a legacy document system to migrate or retire?
- Is the system configurable, or is customization required?
- Does the implementation require regulatory validation?
- Does the EDMS need to integrate with ERP, EAM, GIS, or other systems?



Setting up an EDMS

Setting up an EDMS unlocks significant benefits, but success depends on proper planning and execution. The following best practices—typically implemented in this sequence—help avoid common pitfalls and ensure a smooth, effective rollout:

1. Gather requirements from key stakeholders.
2. Define standards for drawings, documents, templates, and naming to improve searchability and reduce duplication.
3. Design check-in/check-out processes with role-based controls to protect sensitive information and maintain data integrity.
4. Configure workflows—existing or redesigned—to streamline processes, reduce manual errors, and maintain audit trails.
5. Implement regular backup and security measures to ensure data accuracy, compliance, and long-term performance.
6. Train teams on effective use of the system for their role.

Keep these practices in mind throughout implementation and ensure they are clearly communicated to your EDMS vendor.



Top 3 Barriers to a Successful Implementation

Even with the right technology, implementing an EDMS can face challenges that slow progress or limit success. Many barriers arise not from the software itself, but from organizational readiness, data quality, and process alignment. Understanding these common pitfalls can help teams plan proactively and avoid costly setbacks. Addressing these factors early and with all the relevant stakeholders is critical to achieving a smooth and sustainable implementation.

The Top 3 barriers to fast, efficient EDMS implementation include:



1. Weak Stakeholder Engagement

An EDMS impacts nearly every function—including engineering, document control, operations, maintenance, procurement, and IT. Without early and sustained stakeholder engagement, implementations often suffer from misaligned priorities, poorly designed workflows, and user resistance.

Problems typically arise when organizations:

- Limit involvement to document control or IT, excluding engineers, field teams, and contractors from design decisions.
- Fail to map how different groups create, use, and depend on documents—resulting in workflows that don't reflect real-world practices.

How to avoid this:

1. Establish a cross-functional steering team representing all document stakeholders.
2. Conduct process mapping and user interviews before system configuration.
3. Use pilot groups to validate assumptions, gather feedback, and refine workflows before enterprise rollout.

2. Lack of Executive Sponsorship

Executive sponsorship goes beyond budget approval—it requires visible, sustained leadership support. Without it, EDMS initiatives often stall, lose priority, or fail to gain adoption across the organization.

Problems commonly occur when organizations:

- Treat EDMS as a back-office IT initiative rather than a strategic enabler of operational efficiency, compliance, and digital transformation.
- Fail to align EDMS objectives with corporate KPIs such as reduced downtime, faster project turnover, or improved asset performance.
- Provide inconsistent or unclear leadership messaging on why the change matters and how success will be measured.

How to avoid this:

1. Secure a C-level or VP sponsor who can clearly articulate the business rationale for EDMS.
2. Align success metrics to executive priorities such as safety, cost reduction, and knowledge retention.
3. Reinforce progress and early wins through consistent leadership communication.

3. Big-Bang Implementation Instead of a Phased Approach

Attempting to deploy an Engineering Document Management System (EDMS) across the entire enterprise at once increases risk, delays value, and makes adoption more difficult. Big-bang implementations often try to address every department, document type, and workflow simultaneously—before the system has been validated in real-world use.

Problems typically arise when organizations:

- **Attempt to support all departments and use cases at once**, creating unnecessary complexity and slowing stabilization.
- **Delay deployment until all legacy documents are migrated and organized**, postponing access to immediate operational benefits.
- **Define workflows and governance upfront without real user validation**, resulting in processes that do not align with actual engineering and maintenance needs.
- **Roll out new processes organization-wide without proving success in a smaller scope first**, increasing resistance and reducing adoption.

A phased approach allows organizations to start with a focused scope, demonstrate success, and expand confidently—reducing risk while delivering value sooner.

How to avoid this:

1. Start with a pilot or single department to validate workflows, governance, and adoption.
2. Apply lessons learned to refine configuration before scaling.
3. Define clear milestones (e.g., data cleanup → pilot → key teams → enterprise rollout).

Why Synergis Adept?



Why Adept?

A Smarter Way to Manage Engineering Information

In complex engineering environments, disconnected systems drive wasted time, version errors, data silos, and compliance risk. Synergis Adept unifies the capabilities of an EDMS and a PDM into a single, purpose-built platform—providing complete control over engineering documents, designs, and data across the enterprise.

By connecting people, processes, and systems, Adept simplifies collaboration, protects intellectual property, and delivers full visibility throughout the engineering and asset lifecycle.

Unlike traditional solutions, Adept combines deep multi-CAD integration with enterprise-grade document control, intuitive usability, and proven customer support—making disciplined information management practical at scale.

Adept stands apart from competitors by combining deep CAD integration with enterprise-grade document control, intuitive usability, and exceptional customer support.

Comparing EDMS, PDM, PLM, ECM, and Construction Management Systems

A practical comparison of engineering document management, product data management, enterprise content management, and construction collaboration system types.

Organizations managing engineering information often evaluate multiple system types, including enterprise content management (ECM), engineering document management systems (EDMS), product data management (PDM), product lifecycle management (PLM), and construction management platforms used by EPCs.

While these system types share some overlapping capabilities, they are designed for fundamentally different purposes—spanning general document control, product design and data management, project-based construction collaboration, and the management of enduring plant and facility assets.

This comparison highlights the typical strengths and limitations of each system type to help organizations determine the best fit for their engineering, product, project, and operational needs.

Comparing EDMS, PDM, PLM, ECM, and Construction Management Systems

Criteria	Enterprise Content Mgmt (ECM)	Product Lifecycle Mgmt (PLM)	Product Data Mgmt (PDM)	Engineering Document Mgmt (EDMS)	Construction Drawing Mgmt	Adept (EDMS + PDM) with integrated contractor collaboration
Primary Purpose	Business document control	Product lifecycle governance	CAD data management	Engineering document control	Project-based document exchange	Engineering, CAD, and related documents across asset lifecycle, product design
Key Strength	Enterprise content search	End-to-end product control	Strong CAD relationships	Asset-centric document control	Contractor collaboration	EDMS + PDM + contractor workflows
Key Limitation	Limited engineering & CAD context	High cost, complexity, and ongoing resource demands	Limited support for plant asset lifecycles	Limited 3D CAD integration or relationship support	Project-only, no lifecycle control, not an asset system of record	Not a financial or ERP system
Best Fit For	General business content	Large, product-centric manufacturers with dedicated PLM resources	Mechanical design teams	Asset-intensive engineering orgs	EPCs & construction projects	Multi-plant engineering enterprises & PDM
Types of Data Managed	Office documents, records	Product data, BOMs	CAD files & assemblies	Drawings, specs, as-builts	Construction drawings, submittals	Engineering documents, 2D/3D CAD data, project deliverables, general doc
Plant & Facility Asset Support	Minimal	Indirect	Limited	Strong	Project-only	Strong at scale
Change & Lifecycle Control	Basic versioning	Full lifecycle change mgmt	Design change control	Document revisions & approvals	Submittal revisions	Concurrent project and design change control with cross-team workflows
Enterprise Integration	Microsoft ecosystem	Enterprise systems	CAD tools	ERP, EAM, CMMS	Limited	ERP, EAM, CMMS, BI, Enterprise systems

The Problems Adept Solves

Organizations struggle to achieve operational excellence when engineering information is fragmented across systems, teams, and locations. Without a unified platform like Synergis Adept, there is no single source of truth, no consistent way to enforce standards and best practices, no automation for critical workflows, and limited traceability across the document lifecycle.

These gaps introduce real operational risk—ranging from safety and compliance issues to unplanned shutdowns, delayed response in the field, manufacturing or construction scrap, costly change orders, and schedule overruns. Over time, disconnected information erodes efficiency, accountability, and confidence in the data teams rely on every day.

- 1 No unified view of enterprise engineering content
- 2 Time lost searching for documents and data
- 3 Costly version control and revision errors
- 4 Limited traceability of changes and approvals
- 5 Manual workflows and approval bottlenecks
- 6 Inefficient collaboration across teams & sites
- 7 Broken CAD relationships and slow design workflows
- 8 Lack of digital markups for field and design feedback
- 9 Poor visibility into data for decision-making
- 10 Engineering documents and IP at risk

Essential Capabilities and Benefits of Adept

Synergis Adept streamlines how teams access, control, and share critical engineering information across the enterprise. By connecting stakeholders, simplifying document search, enforcing version accuracy, and automating workflows, Adept creates a unified digital environment that improves collaboration, reduces risk, and drives measurable efficiency.

These four core capabilities—**Connect**, **Search**, **Version Control**, and **Workflow**—form the foundation of disciplined information management that keeps projects on track and operations running smoothly.

Connect

Unify your workforce.

Align engineering, maintenance, operations, capital projects, and construction teams—including external contractors—on a single, centralized platform for controlled document access and collaboration.

Search

Find documents fast.

Enable teams to locate the right document instantly—day or night—regardless of folder structure or storage location, improving productivity by 20–30%.

Version Control

Always the right version.

Prevent safety incidents, scrap, and change orders with automated version control. Adept supports major and minor (WIP) revisions and preserves CAD parent-child relationships—with control over fixed or floating references.

Workflow

Automate work processes.

Eliminate bottlenecks by routing documents through predefined approval workflows. Notifications and time-based alerts keep reviews moving and accountability clear.

Essential Capabilities and Benefits of Adept

Synergis Adept goes beyond organizing files—it protects intellectual property, simplifies complex design workflows, and delivers full visibility across the document lifecycle. Capabilities such as **Visualization, CAD Integration, Security, and Traceability** enable teams to collaborate with confidence, maintain design integrity, and meet rigorous compliance requirements. Together, they form a secure, connected foundation for modern engineering environments.

Visualization

View and mark up without barriers.

Enable users to view and mark up native 2D and 3D CAD files directly in Adept—no CAD license required. Supports Autodesk, SOLIDWORKS, MicroStation, and dozens of CAD, office, and graphics formats.

CAD Integration

Work seamlessly inside CAD.

Allow CAD users to find and preview designs, check them in and out, manage file relationships, and view metadata—without ever leaving the CAD application. Link CAD properties and attributes to Adept metadata to improve searching.

Security

Protect your intellectual property.

Engineering documents represent decades of institutional knowledge and competitive advantage. Adept secures thousands—or millions—of digital assets with controlled access, data protection, and safeguards against theft and cybercrime.

Traceability

Maintain complete audit history.

Track who did what and when with a comprehensive, searchable audit trail across the document lifecycle. Simplify compliance, streamline audits, support investigations, and reduce legal and IP risk.

Essential Capabilities and Benefits of Adept

Synergis Adept extends beyond core document control to streamline connected processes across the enterprise. Capabilities such as **Transmittals**, **Mobile Access**, **PDF Automation**, and **Application Integration** improve productivity, accessibility, and data flow across teams and systems—enabling faster collaboration, simpler document exchange, and seamless interoperability.

Transmittals

Accelerate document exchange.

Streamline the process of locating files, validating versions, collecting references, generating cover sheets, packaging, sending, and maintaining an auditable record—freeing teams for higher-value work.

Mobile Access

Access documents anywhere.

Give field teams fast, secure access to the right documents—online or offline. Find, view, and mark up documents on iOS or Android devices, day or night.

PDF Automation

Automate high quality PDF output.

Simplify PDF workflows with automated or on-demand publishing of CAD and Microsoft Office files. Generate high-fidelity PDFs in single or batch mode without tying up workstations.

Application Integration

Connect enterprise applications.

Orchestrate data flows and business processes that span across enterprise applications—including ERP, EAM, CMMS, GIS, BI, Project Management, SharePoint, Exchange, Adept, and more—ensuring seamless interoperability.

Cloud and On-Premise Adept Deployment Options

Synergis offers two deployment options for Adept, allowing organizations to choose the model that best aligns with their IT strategy, security requirements, and operational priorities.

Cloud Deployment (SaaS)

Hosted and managed by Synergis, Adept Cloud delivers enterprise-grade document control without the burden of infrastructure management.

Key advantages include:

- Infrastructure fully managed by Synergis
- Guaranteed 99.5% uptime
- Faster deployment and time to value
- Minimal IT resources required
- Automatic upgrades and patches
- More frequent feature and value delivery
- Unlimited user licensing model
- Automated backups and disaster recovery
- Enterprise grade security standards
- Secure access from anywhere
- Elastic capacity without manual provisioning
- Full data ownership in Synergis-managed cloud
- Remote support services included

On-Premise Deployment

Installed within an organization's own data center or private infrastructure, on-premise Adept provides maximum control over environment and data.

Key advantages include:

- Full control over configuration and updates
- Full control over data location and infrastructure
- Internal ownership of security architecture
- Operates locally during internet outages
- Predictable performance on local networks
- Deeper integration with legacy systems
- Greater customization flexibility
- Fixed, predictable long-term cost model
- Supports air-gapped environments
- Leverages existing IT infrastructure

Adept is #1 in our Field

Reviews presented by 

Adept is a G2 2026 Best Software Award winner

Synergis Adept has been named to G2's 2026 Best Software Awards, placing No. 37 on the global CAD & PLM Software Products list as the highest-ranking Engineering Document Management solution.

Selected from more than 175,000 software vendors on G2, Adept's placement in G2's Best Software Awards ranks the solution among the top 1%, based on verified customer reviews and market presence data.

This award—along with more than 30 additional top placements in G2's quarterly rankings—demonstrates consistent customer validation. With 95% of Synergis Adept reviews rated four or five stars, our users highlight usability, implementation success, ROI, and responsive support.



Validated by Customers. Proven Against Competitors.

Based on verified G2 user reviews, Synergis Software consistently outperforms alternatives such as Autodesk Vault, Siemens Teamcenter, SOLIDWORKS PDM, and M-Files across key categories including support, ease of setup, administration, and overall ease of doing business. These results reflect Synergis's focus on responsive support, intuitive usability, and delivering measurable value in engineering document management.



Customer Success Stories

Melissa Chiotis, Con Edison
Customer since 2016

How Leading Organizations Turn Engineering Data into Competitive Advantage

Customer Success Stories across Regulated and Asset-Intensive Industries

Many of the world's best companies across a variety of industries rely on Synergis Adept to manage their most critical engineering and operational data. These organizations have achieved measurable results, including millions in annual savings, faster project delivery, stronger compliance, and improved collaboration across global sites. These success stories highlight how Adept transforms document control into a strategic advantage. It provides a single source of truth, empowering teams with reliable information to drive performance, safety, and innovation at scale.

Dow Chemical Company

Dow implemented Adept in 2012, consolidating more than 20 engineering document management systems into one platform across 70+ manufacturing sites worldwide. Today, Dow manages over \$5B in digital assets containing critical intellectual property, with 17,000+ users accessing more than 6 million documents through Adept.

Adept is Dow's system of record for plant as-built documentation, equipment drawings, and capital projects, and underpins two enterprise-wide standards: Dow's Most Effective Technology Portal (MEP) for engineering standards and its Global Project Methodology for capital project execution.

- \$57B Materials Science company
- Replaced 20+ systems at 70+ sites
- Global portal for as-built documents and capital projects
- Key drivers:
 - Single source of truth
 - Global consistency and collaboration
 - Operational excellence and compliance
 - Estimated annual value of more than \$12M

"Adept manages billions of dollars of digital assets containing priceless Dow intellectual property, with thousands of users across several dozen global sites."

Adept is the cornerstone of our digital transformation strategy."

Teresa Yang
IT Business Process Expertise Manager

Buzzi Unicem

Headquartered in Bethlehem, Pennsylvania, Buzzi Unicem USA is one of the leading cement manufacturing companies in the US with several manufacturing plants and regional US terminals.

The EDM initiative was sponsored by the Corporate Technical Engineering and Construction Mgmt. Group, which supports large Capital Projects. They are responsible for project design & detail specs, equipment documentation, as-built plant design, and operating & maintenance manuals.

The key drivers for Adept were:

- Support hundreds of capital projects on an annual basis with hundreds of process equipment types.
- Control hundreds of thousands of drawings and documents, including designs, details, specifications, and contracts
- Collaborate efficiently with many subcontractors and equipment manufacturers
- They're using Adept across all their plants throughout North America.

"With our capital projects, delivering early means millions of dollars in savings and revenue. Adept is the key, unifying technical documents from 16 plants, simplifying access, and streamlining collaboration across internal and external teams."

Bill Kovacs
Director, Engineering & Construction

Albermarle

Albermarle is a global leader in Lithium, bromine and catalyst solutions. They selected Adept to help them find, control, and collaborate on their as-built drawings and related documentation for their global facilities.

Adept gives them improved data integrity and visibility, and has automated their manual workflow processes to streamline document approvals.

Albermarle has more than 1,400 people using Adept in engineering, operations, maintenance, process and R&D across 4 North American sites and the Netherlands, Australia and Chile.

- Global leader in specialty chemicals
- 1400+ users globally
- Deployed in N. America, Netherlands, Australia, Chile
- Key drivers for Adept:
 - Centralized management of technical documentation for global facilities
 - Process automation

“I see Adept as a system that helps create a unified company vs. individual sites. That’s the biggest benefit for us.”

Chad Glick
Global CAD Manager

Con Edison

Con Edison is one of world's largest energy delivery companies, delivering electric, steam, gas, and clean energy to New York City and Westchester County. Central Engineering replaced a large TeamCenter implementation with Adept in 2016, and Gas & Electric followed, replacing a large Bentley ProjectWise implementation.

With over 5,000 Adept users, Con Ed is managing the engineering documentation related to their entire utility infrastructure and capital projects.

- One of the world's largest T&D companies
 - 5,000 Adept users
 - Replaced large Team Center & ProjectWise implementations
 - Managing their utility infrastructure and capital projects
- Key drivers for Adept
 - Utility infrastructure reliability
 - 24/7/365 access to reliable information in the field
 - Compliance with NERC and CIP standards
 - Workforce safety

"We provide energy for the 10 million people who live in New York City and Westchester County... so risk mitigation is really important. This is why we have our entire infrastructure—all our drawings—stored in Adept. The end goal here is not only to make sure that we're in compliance with NERC and CIP regulations, but anything that can help us improve reliability."

Donal Fortune
IT Manager

Ruhrpumpen

Ruhrpumpen is an innovative and efficient pump technology company that offers highly-engineered and standard pumping solutions for the oil & gas, power generation, industrial, chemical and water markets.

With 1,000+ users across the U.S., Mexico, Brazil, Germany, and China, they required an EDM system to manage the complexity of a global operation while streamlining workflows and improving collaboration.

- \$350M manufacturer pumping solutions manufacturer
- Over 1,000 global Adept users
- Key drivers:
 - A backbone to scale engineering across geographies
 - PDM for Autodesk Inventor
 - Controlled, predictable, and automated plant and project document management
 - Revision consistency & error reduction
 - Integrations across EDMS, project management, operations, and planning systems

“Adept is essential for our daily operations. With engineering teams collaborating across the globe, and based on the excellent results we’ve achieved, we’ve now fully integrated Adept into our business processes.”

Eduardo Cantu
North American IT Director

Merck

Merck is a global biopharmaceutical company that researches, develops, manufactures, and markets prescription medicines, vaccines, and animal health products to prevent and treat diseases worldwide.

They required a centralized system to manage global GMP engineering documentation to simplify regulatory compliance and system validation for FDA 21 CFR Part 11.

- \$59B global pharmaceutical company
- Managing as-built GMP engineering documentation for entire sites including manufacturing facilities, above and below ground utilities, office buildings, and floor plans
- Key drivers:
 - Tight integration with AutoCAD and MicroStation
 - Extensive audit trail
 - Data segregation between sites
 - Different workflows for GMP, safety, engineering
 - Used by design engineering, maintenance, others

“My risk profile is vastly improved, and I have a validated system. We now have version control... and a centralized version of the truth.”

Ray Kastle
Associate Director, Supply Chain



Leveraging EDMs to Power the Digital Future

EDMS as the Digital Backbone for Industry 4.0

In the era of Industry 4.0, data drives digital transformation—and an EDMS turns that data into something operational and trustworthy.

Yet many organizations struggle to realize this vision:

- 76% of industrial companies cite disconnected systems as the biggest barrier to digital transformation
- 80% of AI and analytics project time is spent cleaning and structuring data
- 60% of engineering organizations face significant knowledge-transfer risk as experienced employees retire

An EDMS addresses these challenges by going far beyond file storage. It connects engineering, operations, and maintenance data across systems such as ERP, CMMS, SCADA, and AI/IoT platforms—creating a single, governed source of truth that enables automation, consistency, and smarter decision-making.

As organizations move toward more connected, intelligent operations, EDMS provides the structured, reliable data backbone required to support AI, predictive maintenance, and enterprise-wide innovation—transforming static documents into living intelligence that powers the future of the plant.

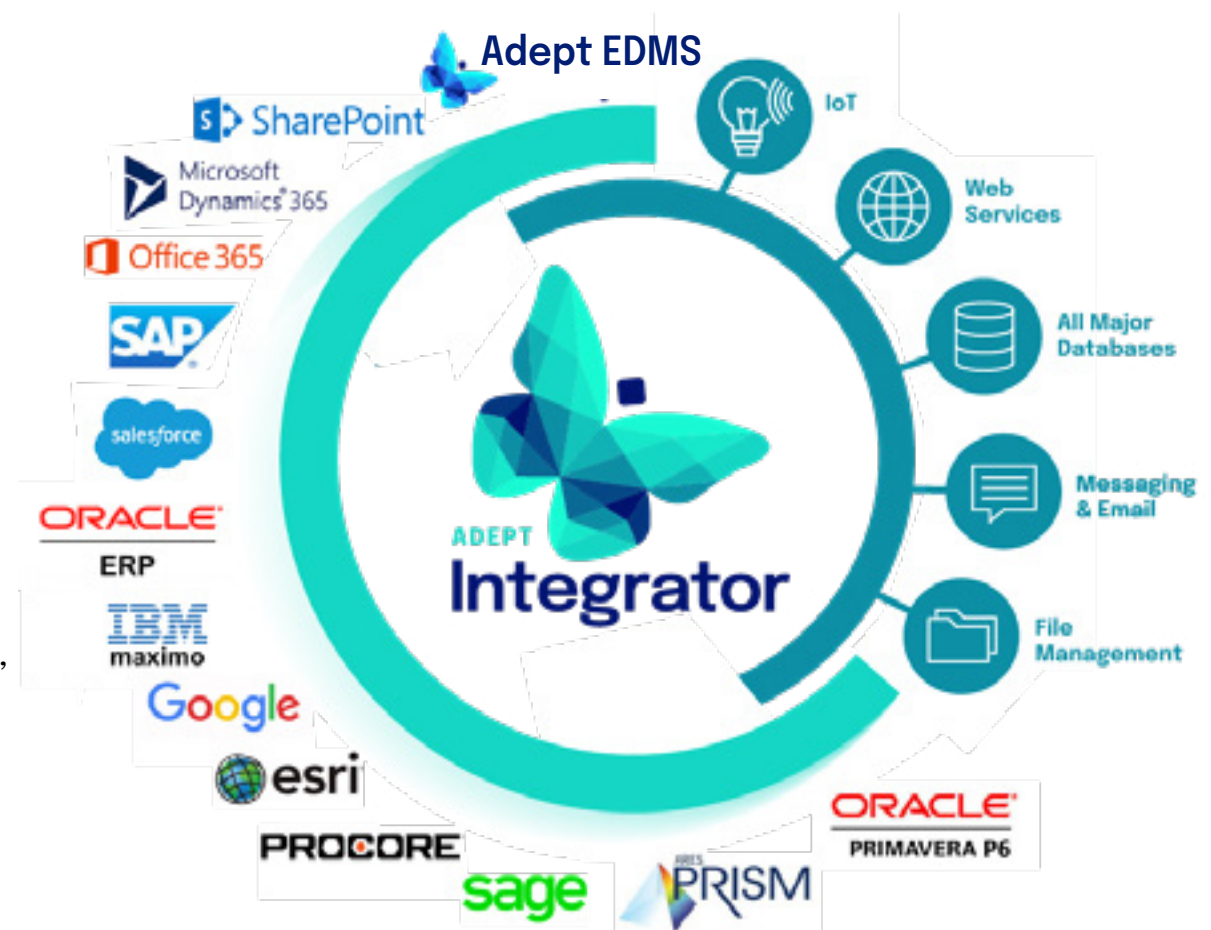
As organizations evolve toward smarter, more connected operations, EDMS provides the structured, reliable data backbone needed to power AI, predictive maintenance, and enterprise-wide digital innovation—turning static documents into living intelligence that drives the future of the plant.

Orchestrate Data and Workflows Across Systems

An EDMS is more than document storage—it is a key component of a connected digital ecosystem. Alongside systems of record such as ERP, EAM, CMMS, and project management platforms, EDMS governs engineering information while exchanging data bidirectionally across integrated systems. Each system remains authoritative for the data it owns, while trusted information is shared where and when it's needed.

Integration enables data to flow between systems based on user roles and business context. Teams work within the applications they use every day, while EDMS keeps engineering documents, metadata, and approvals synchronized across the enterprise.

Beyond data exchange, EDMS enables workflows that span systems. Requests, approvals, updates, and status changes can be orchestrated across platforms—ensuring information moves in the right sequence, systems stay aligned, and people engage through the tools best suited to their role. The result is fewer silos, less manual handoff, and a coordinated digital infrastructure that supports faster decisions and more reliable execution.



EDMS as an AI Amplifier

As plants and facilities advance their digital transformation, an EDMS becomes the backbone for enabling AI, machine learning, and IoT. By ensuring engineering data is structured, reliable, and connected, EDMS provides the foundation for intelligent automation, predictive insights, and seamless data flow across systems.

When combined with AI-driven tools, operations become more agile—information moves faster, decisions improve, and maintenance shifts from reactive to predictive.

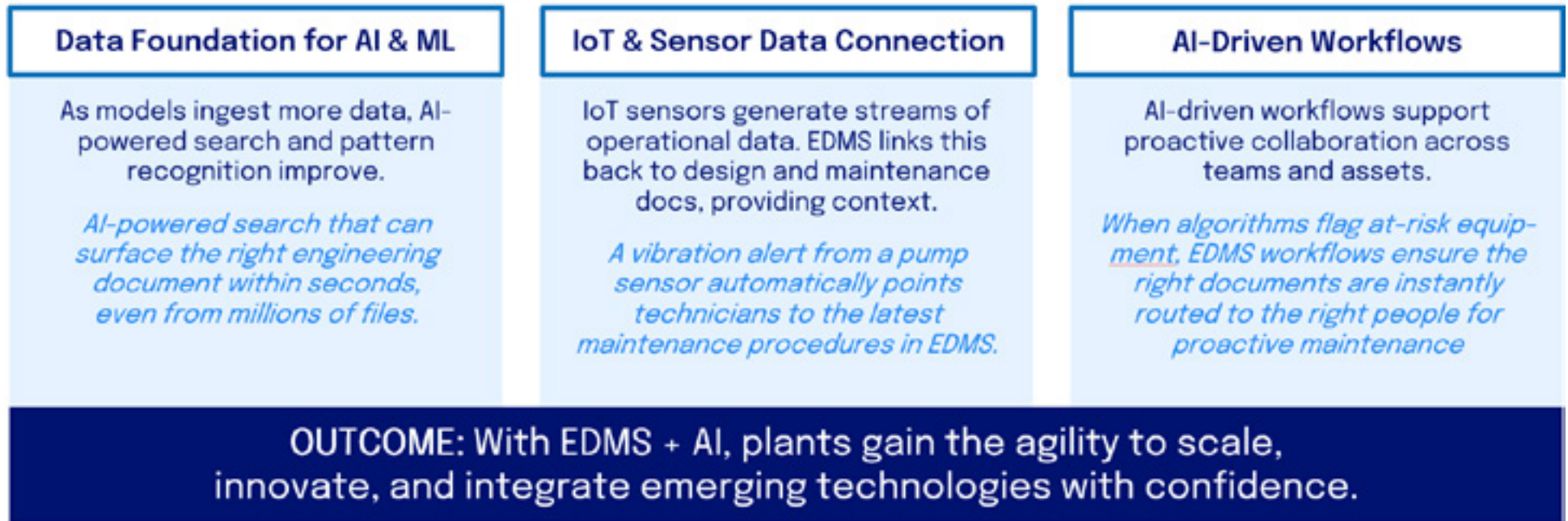
AI doesn't replace people; it augments them—equipping engineers, operators, and decision-makers with faster insights, smarter automation, and greater confidence to act.



Driving Transformation at Scale

As organizations move toward Industry 4.0, the role of an EDMS expands from a project-level solution to a company-wide digital backbone. By structuring and connecting engineering data, EDMS lays the foundation for AI-driven insights, predictive maintenance, and intelligent automation.

AI and machine learning depend on reliable, well-structured data—and EDMS provides that foundation. By organizing and linking engineering information across systems, EDMS enables AI models to learn, predict, and act with greater accuracy and confidence.



Ready to apply this to your environment?

Schedule a Call with an Adept Expert

We can:



Help you understand your opportunity – Get a clear view of where inefficiencies, risk, and rework are costing you the most and what a right-sized EDMS strategy could deliver in ROI, operational impact, and time savings.



Show you Adept in Action – We'll set up a live, personalized demo of Adept for you (and your team), to see how Adept supports document control, CAD file management, version and revision control, automated workflows, and real-world engineering use cases.

Let's Get Started

About Synergis Software

Synergis Adept is a G2 2026 Best Software Award winner and a leading engineering document management (EDM) and product data management (PDM) solution trusted by global organizations including Dow, Con Edison, Merck, and General Mills. For more than 30 years, Adept has helped asset-intensive industries—including manufacturing, chemicals, utilities, oil and gas, life sciences, and mining—centralize, govern, and leverage engineering and product data to accelerate projects, strengthen compliance, and reduce operational risk.

Used by more than 250,000 professionals worldwide, Adept delivers a single source of truth that connects engineering, operations, maintenance and capital project teams. The platform provides deep CAD integration, advanced version and revision control within governed change processes, automated, compliance-ready workflows, and complete traceability across the engineering and asset lifecycle.

www.synergissoftware.com



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