EFFICIENT AND COMPLIANT MANAGEMENT OF GMP CONTROLLED DOCUMENTS

A 15-MINUTE GUIDE FOR LIFE SCIENCES QUALITY AND MANUFACTING ORGANIZATIONS

By unifying, simplifying, and automating the management of controlled documents, your organization can create an efficient, flexible, and—most importantly—compliant manufacturing operation that increases product quality and productivity, and prevents remediation, consent decrees, and product recalls.

EXECUTIVE SUMMARY

Life Sciences quality and manufacturing organizations face three critical industry forces: increasingly stringent regulation; globalization; and virtualization of supply networks. These trends, along with changing user preferences, create new challenges for compliant document management including increased complexity and the need for collaboration.

This 15-Minute guide provides a short overview of these trends, and describes three best practices for improving document management practices while improving the productivity of manufacturing organization:

- Unify document management policies, processes, and systems
- Simplify user interfaces and ongoing process and system administration
- Automate document management tasks and reporting

The Guide also provides a short summary of the capabilities and benefits of the EMC® Documentum® for Life Sciences Quality and Manufacturing Solution, which was designed to meet the unique needs of Life Sciences companies and enable these best practices.

We hope you find it 15 minutes well spent.

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INTRODUCTION

Life Sciences organizations are changing the way they develop, manufacture, and sell their products. To address ever-growing global markets and strong downward price pressure in developing countries, companies are integrating more third parties—such as development partners, contract research organizations (CROs), and contract manufacturing organizations (CMOs)—into their value chains. With all-too-often inadequate product pipelines, many companies are acquiring and integrating other firms to help drive innovation as well as improve operational efficiency and margins.

At the same time, regulatory agencies around the world are increasing their scrutiny of Life Sciences organizations. Not surprisingly, in a recent survey, 60 percent of Life Sciences executives stated that regulatory and legislative pressures are the most significant barrier to their companies' growth.[1] Ensuring compliance with tougher regulations—while maximizing productivity in highly distributed operations—is enormously challenging.

To stay compliant with safety, quality, and regulatory standards, Life Sciences quality and manufacturing operations must have—and consistently follow—two critical processes:

- A quality manufacturing process in line with GMP (good manufacturing practice) guidelines.
- A documentation control process that describes, specifies, and records manufacturing and quality activities in compliance with requirements such as GAMP-5, 21 CFR Part 11, and Annex 11.

Failure in either area can have catastrophic consequences.

A solid document management strategy is essential to prevent such business-crippling events. The technology and processes that create the foundation of this strategy must span the virtual enterprise and the product lifecycle. The right solution will enable Life Sciences organizations to reduce the overall cost of compliance and improve productivity—both internally and externally—while improving their ability to meet regulatory demands.

DISRUPTIVE FORCES: INDUSTRY TRENDS AND THE CHALLENGES THEY CREATE

As the Life Sciences industry evolves, three trends continue to intensify document management challenges, creating numerous constraints and requirements throughout the quality and manufacturing operation.

REGULATORY ENVIRONMENT

Although the industry has always been highly regulated, most regulatory agencies were once based in—and focused on—the United States and Western Europe. In recent years, more countries have established agencies to regulate their own markets. Some regions, such as the European Union, have multiple agencies at different levels formulating a variety of rules that must be followed to sell products in that market. As a result, all manufacturers face a vast array of regulations as they expand to new regions.

From the Food and Drug Administration (FDA) in the United States and the European Medicines Agency (EMA) in Europe, to the Central Drugs Standard Control

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1 "Pharmaceuticals and Life Sciences 2012 Industry Outlook Survey," KPMG, Q2 2012.

Organization (CDSCO) in India and the State Food and Drug Administration (SFDA) in China, regulatory agencies are demanding more information than ever.

When the Food and Drug Administration Safety and Innovation Act (FDASIA) was enacted on September 18, 2012, document management practices reached a new level of importance. The law increases fees for new drugs and devices, while speeding the approval process. These funds will enable the FDA to adopt an aggressive worldwide inspection policy: risk-based inspections. Manufacturers will be inspected at least once every two years, and will also be subject to more frequent inspections based on compliance history, recall history, risk level of the drug or device, or "any other criteria." In addition, manufacturers will be required to supply all electronic or paper records in advance of the inspection.[2] To comply with the FDASIA and myriad other regulations, proactive and comprehensive document management procedures will be more critical than ever at every point in the value chain.

GLOBALIZATION

Globalization of the Life Sciences market is another complication for document management. Patients in emerging markets create new business opportunities, but they cannot afford the same prices as developed areas. To stay competitive and profitable, manufacturers must adapt to the needs and demands of their customers—new and current. This means addressing economic realities as well as language-related issues and country-specific laws and customs.

Expanding global markets exacerbate document management challenges because a broader number of regulatory requirements must be met, across a larger number of operating sites, and often at lower cost. To produce safe products qualified for sale manufacturers must maintain sufficient control over documents, yet provide the flexibility to meet unique regional needs. The price pressures from developing markets means life sciences companies must operate more efficiently and cannot pass on the cost of regulatory compliance to patients.

VIRTUALIZATION OF SUPPLY NETWORKS

The growing complexity of the Life Sciences supply chain also affects document management practices. Almost every Life Sciences organization now relies on CMOs, many scattered around the world, to manufacture their products. When more parties are added to the supply chain, effective collaboration becomes essential. Manufacturers must be able to securely exchange documents across organizational boundaries and geographies. Controlled documents should flow quickly through the supply chain, but regulatory requirements cannot be overlooked, no matter how complex the operation becomes.

Many Life Sciences organizations lack the IT systems needed to meet these new document management challenges. Ignoring the challenges will be costly.

RISK OF INACTION: THE COSTS OF POOR DOCUMENT MANAGEMENT

Failure to improve the management of controlled documents carries tremendous risk for every Life Sciences organization. The costs can range from the intangible reduction of operational efficiency to the more tangible fines for non-compliance and legal liability.

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2 Food and Drug Administration Safety and Innovation Act of 2012, 112th Congress, 2nd Session, S 3187.

In recent years, regulators have imposed severe penalties on organizations that violate GMP or environmental rules. Consider these cases:

- On January 15, 2012, the FDA announced a consent decree of permanent injunction against generic drug manufacturer Ranbaxy. The company set aside $500 million to remedy deviations from GMP requirements and to correct data integrity problems at numerous facilities. [3]

- On November 22, 2011, the EMA announced a recall of a number of drugs manufacturer by France-based Ben Venue Laboratories—a result of GMP violations identified during inspections. Ben Venue voluntarily shut down the facility as a result. [4] On May 14, 2012, the US Department of Justice charged William Zinnanti with introducing adulterated medical devices into interstate commerce, resulting from non-compliant methods, facilities, and controls used to manufacture, pack, and store his company's medical device. Zinnanti faces up to three years in prison and a fine of $250,000. [5]

- On September 5, 2012, Harbin Pharmaceutical Group announced the relocation of a plant in China's Heilongjiang province, at a cost of $110 million. The Environmental Protection Department had fined the company nearly $200,000 for pollution violations and halted production at the plant a year earlier. [6]

- On July 13, 2012, the Andhra Pradesh Pollution Control Board in Hyderabad, India ordered the shutdown of 12 manufacturing units of 8 different pharmaceutical companies located around the city for violating pollution regulations. [7]

Violations can quickly snowball. Gaps in GMP compliance discovered during internal audits results in unplanned costs of remediation activity, diversion of management time and attention, and a drop in operational efficiency. They can also lead to more frequent internal audits and added reporting and documentation requirements may raise compliance costs even higher. A warning letter from a single regulator can interrupt production, at a cost of more than $1 million per day, and corrective actions can be time-consuming and expensive.

When problems are left unresolved, the consequences are even more dire. Serious violations can lead to product recalls and seizures, fines, temporary or permanent closures, suspended or revoked license, and in rate cases, imprisonment. Consent decree fines alone can range from $50 to $500 million. Even if the issue is resolved, regulators can demand new reporting requirements and initiate more audits and inspections. Poor document management practices can affect product quality, and subsequently harm patients, damaging reputations and brand equity.

BEST PRACTICES: OVERCOMING YOUR DOCUMENT MANAGEMENT CHALLENGES

The costs related to ineffective document management are simply too high to risk inaction. The three best practices described in this section can help your Life Sciences organization—no matter how widely dispersed or complex your operation—reduce the risk of non-compliance while maximizing efficiency.

UNIFY

Industry mergers and acquisitions, combined with the addition of third parties to the supply chain, have created siloed document repositories and multiple records systems. To reliably track and ensure the integrity of records and speed the integration of new sites and partners, Life Sciences organizations should focus on the unification of policies, information architecture and taxonomies, document repositories, IT platforms, and security.

Compliant and Efficient Content Management — Unify · Simplify · Automate

3 "Department of Justice Files Consent Decree of Permanent Injunction Against Ranbaxy," US FDA News Release, January 25, 2012.

4 "European Medicines Agency Gives Interim Recommendations to Deal with Shortcomings in Quality Assurance at Ben Venue Laboratories," EMC Press Release, November 22, 2011.

5 "Former Hershey Resident Charged Federally with Adulteration of Medical Devices," US Department of Justice Press Release, May 15, 2012.

6 "Andhra Pradesh Pollution Board Directs 12 Pharma Units to Close Operations," Press Trust of India, July 13, 2012.

7 "Pharmaceutical Plant to Relocate After Pollution Scandal," ChinaDaily.com.cn, September 5, 2012.

- UNIFIED POLICIES: Defining and documenting records management policies is a key regulatory requirement and critical to maintaining consistent practices across the organization. Inspectors may request this documentation at any time during an investigation. Disparate policies can increase risk of non-compliance and reduce operational efficiency when inconsistencies between sites or with third parties are discovered. A unified policy management system that spans company and geographic boundaries will establish consistent processes that don't conflict or override one another.

- UNIFIED DOCUMENT REPOSITORIES: After years of industry expansion and consolidation, Life Sciences organizations often find themselves with numerous document repositories. The repositories are costly to maintain and support, taxing already overburdened IT resources. Unifying data in a single repository will help you cut costs and ensure the integrity of your documents.

- UNIFIED IT PLATFORM: Industry consolidation has also led to multiple IT platforms and information silos. Inadequate and overly complex systems are both costly and unreliable, leading to production-delaying IT outages. Silos are not just inefficient and risky; they also inhibit knowledge-sharing. To ensure document control and compliance, disparate systems must be unified so that data and documents can move freely among departments and business processes.

- UNIFIED SECURITY: Managing security policies in a consistent way protects invaluable intellectual property (IP) by ensuring that controlled documents are accessible only to authorized users. A central, easily configurable, role-based security management system simplifies internal access management, as well as the addition and removal of users at CMOs and other third parties.

SIMPLIFY

Life Sciences quality and manufacturing operations are inherently complex. The regulatory environment, globalization, and expanding supply networks have combined to create a tough business challenge. Complex document management processes and systems hamper productivity and slow down the creation and approval of critical documentation. Complexity also causes human error that can result in non-compliance. Managing controlled documents doesn't have to be so complex. By focusing on several key areas, you can simplify your IT systems.

- PROCESSES: Not all documents require the same level of control. Simplify and streamline document management processes by clearly identifying the control requirements for different document classes. Make sure that handling, review, approval, and retention practices reflect those requirements, so that uncontrolled or self-approved documents can speed through the system without draining unwarranted time and attention. Simplify document management further through automation and workflows, so that processes such as Standard Operating Procedure (SOP) creation or Corrective Action and Preventive Action (CAPA) reviews can run with minimal human intervention. Evaluate the process periodically to identify and eliminate bottlenecks.

USER INTERFACES: When users are frustrated with a complex, cumbersome, and inefficient system, they will often find workarounds to complete their tasks. These workarounds often increase labor costs and the risk of errors and inconsistencies. To consistently manage controlled documents in compliance with GMP requirements, users need an easy-to-understand interface that can be configured to their responsibilities and preferences without IT assistance. By simplifying user interfaces, you can eliminate errors, prevent non-compliant workarounds, and significantly reduce the cost of user training.

Document access: The ability to quickly access the right document anywhere and from any device is important for effective collaboration between globally distributed facilities and with CMOs, as well as during internal and regulatory audits. Yet security concerns and siloed systems prevent such ready access. To simplify document access, ensure that your document management system has a consistent security management framework designed to protect sensitive documents internally and outside the firewall. Use a unified document repository so the location of the latest documents is never in question. Finally, select intuitive search and document viewing and editing interfaces.

System maintenance and evolution: The system that manages your controlled documents should be flexible and not reliant upon custom code and IT resources. By simplifying the system enhancement process, you can adapt to meet the needs of the market and the business.

System validation: System validation can be a costly and time-consuming endeavor, especially if you have different validation processes for each site. A system designed to change and evolve with minimal re-development will simplify system validation, speeding deployment, facilitating on-going improvements, and reducing the risk of non-compliance.

AUTOMATE

Manual, paper-based processes are too labor-intensive and error-prone to have a place in a highly regulated industry. Automation provides consistency, reliability, and efficiency to your document compliance efforts. By automating the document lifecycle, you can simplify document management for users, while ensuring that processes are followed precisely and consistently and that documents are readily available whenever and wherever you need them.

- DOCUMENT CREATION: Automation will help you ensure consistency and maintain control over your documents from the moment they are created or enter the system. Standardizing documents such SOPs using templates reduces the unnecessary cost of re-creating content while reducing proliferation of content types. Automated ingestion ensures that every document gathered from third parties is accurately classified and accounted for.

- REVIEW AND APPROVAL: Automating workflows ensures that each document follows the required review and approval processes, without missing critical steps. Electronic annotations, comments, and signatures speed the process while maintaining document integrity.

- DOCUMENT DISTRIBUTION: Manual distribution of documents is costly, laborious, and error-prone. Automated distribution ensures that users always have the latest version of each document and that CAPA changes to SOPs or process documents are quickly and consistently implemented, even when the affected operational sites are scattered around the globe. Automated application of security policies allows you to confidently exchange information with your CMOs and other third parties.

- CHANGE MANAGEMENT: Life Sciences organizations must be able to demonstrate the authenticity and origin of controlled documents. Automating the tracking of revision history and will ensure that the latest document versions are always used, and that you can meet regulatory requirements for maintaining a full audit trail of the change process.

- RETENTION: Document retention periods are also prescribed by industry regulations and vary by document type. Automated retention schedules will ensure the integrity of your records, maintain persistent access rights to archived documents, and dispose of obsolete records once they are no longer needed.

Following these three best practices—unify, simplify, and automate—your Life Sciences organization can create a more efficient and compliant quality and manufacturing operation. As a result, you can produce quality products at lower costs, while ensuring compliance.

TRANSFORMING DOCUMENT MANAGEMENT WITH EMC

EMC can help you implement these best practices. The EMC Documentum for Life Sciences Quality and Manufacturing Solution gives you the control and ease of use needed to ensure consistent, ubiquitous compliance with document handling requirements and regulations across the document lifecycle within every part of the organization.

The EMC Documentum For Life Sciences Solution Suite

IMPROVED CONTROL, COMPLIANCE, AND PRODUCTIVITY

The Quality and Manufacturing Solution includes the Control Configuration for Life Sciences, which delivers capabilities designed specially to meet the needs of your quality and manufacturing operation, including:

Document Control

You will be confident that every document managed within the solution can be accounted for at every stage in its lifecycle. The solution ensures that the creation, review, approval, storage, and access to documents are in compliance with global regulations and GMP requirements.

Lifecycle Management

With workflow automation, you can reliably move documentation from creation through publishing and implementation. Built-in lifecycles designed for four different document control categories reduce unnecessary work. You'll be prepared for audits with document lifecycles for review and approvals, version management, change control, and records management functionality.

Industry-Standard Structures

The Quality and Manufacturing Solution was built from the ground up based on the DIA EDM (Drug Information Association Electronic Document Management) and TMF (Trial Master File) Reference models. Its object model, dictionaries, and taxonomies were designed in accordance with these industry-harmonized models to help Life Sciences companies easily integrate information internally, from acquisitions and in-licensing arrangements, as well as between development and manufacturing partners.

Extensible Platform

This Life Science Control Configuration and the underlying platform were developed to seamlessly extend to support a full suite of Life Science applications for document management and control. Additional solutions in the Life Sciences Suite, such as eTMF and R&D Submissions are already available or in development.

Intelligent Capture

The Quality and Manufacturing Solution provides an out-of–the-box, scanner-agnostic document import process via EMC® Captiva® intelligent document capture. The Captiva solution enables automated scanning, capture, and data extraction, as well as multisource monitoring and ingestion. The solution also maintains a human-readable version of each document for future inspections, as required by regulations.

Collaboration

The Quality and Manufacturing Solution simplifies interaction and collaboration on GxP documents across the global organization and with remote employees and external parties. It provides simultaneous authoring, security, and workflow management capabilities. Optional integration with Microsoft SharePoint and Word enables users to work in familiar interfaces.

SIMPLICITY AND SPEED IN A CONFIGURATION-BASED APPROACH

The Quality and Manufacturing Solution is built on the industry-leading Documentum Platform, proven in thousands of enterprise-class deployments, and on EMC Documentum D2, the intuitive, configurable, content-centric application client. These form the enterprise-class foundation for a standardized approach to document control and compliance across the full document lifecycle in every part of the Life Sciences enterprise.

Easy-to-Use Document Handling Interfaces

The Documentum D2 platform provides an intuitive and personalized user interface that facilitates user adoption, reduces training costs, and improves productivity. The modular layout allows users to customize their interfaces with Google Widgets so they can quickly access relevant documents.

Configurability for Simplified Deployment, Maintenance, and Support

The powerful configuration capabilities of Documentum D2 eliminates with need for custom code, which accelerates deployment and dramatically lowers costs for system maintenance. This configurability also simplifies validation of future system changes and updates reduces the dependency on IT resources.

Technology and Life Sciences Expertise to Provide Rapid Lasting Results

EMC Consulting personnel bring the technology and Life Sciences domain expertise to design and deploy a solution that's optimized for the unique needs of your business, to validate the deployment, and to support you for long-term success. EMC Documentum is a proven enterprise platform in Life Sciences, with more than 20 years of use in regulated document management environments.

On-Premise and On-Demand Deployment Options

Quickly deploy the Quality and Manufacturing Solution with.EMC OnDemand which combines best-in-class technologies from VMware, RSA, and EMC for enterprise-grade security and comprehensive backup and recovery options.EMC OnDemand lowers your IT maintenance costs by 10-20 percent while providing professional, best-practice management and administration, availability SLAs (service level agreements), and the agility and scalability to provision new functionality in days.

Alternatively, you can keep your deployment on premises and go live in just 14 weeks with an EMC Consulting implementation, and optional integration and customized enhancements. You'll maintain full control and quickly become self-sufficient through included education and knowledge transfer.

Accelerated System Validation

EMC provides validation services for both deployment options. The validation package includes validation accelerators and test scripts that "jump start" your validation, reduce the overhead of validation, and enable faster implementations. The validation is executed by consultants who are experts in regulatory requirements, computer system validation, and product functionality.

THE EMC DIFFERENCE

- Automated policy enforcement for GMP compliance
- Built on DIA EDM and TMF Reference Model V2.
- Configurable D2 platform for simplified deployment and use
- Available OnDemand for lower TCO
- Enterprise-class solution from a trusted Life Sciences expert
- Single source solution from a leader in Life Sciences document management

ABOUT EMC

EMC Corporation (NYSE: EMC) is the world's leading developer and provider of information infrastructure technology and solutions that enable organizations of all sizes to transform the way they compete and create value from their information.

CONTACT US

To learn more about how EMC products, services, and solutions can help solve your business and IT challenges, contact your local representative or authorized reseller—or visit us at www.EMC.com.

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