The Expanding Role of Regulatory Operations

How Technology Advances Have Equipped Operations Teams to Play a new Strategic Role

By Craig Gassman, MS

This article discusses the expanding function regulatory operations plays within organizations and how their broader responsibilities as process engineers, RIM systems experts and business analysts will play an increasing role in the organization's success.

In the 1999 hit comedy Office Space, two consultants (the Bobs) are tasked with weeding out unproductive employees at a fictional software company, Initech. The Bobs kick off their interview of one Initech manager with the hilarious question, “What would ya’ say... ya’ do here?” This memorable quote strikes a chord with many regulatory operations professionals who have heard similar questions from colleagues throughout their careers.

The regulatory operations role has evolved significantly over the past decade. Its new form is typically unfamiliar to or misunderstood by other functional areas. However, organizations taking the time to learn about and leverage the new skills of today’s regulatory operations teams will gain an advantage in navigating today’s complex operating environment and outmaneuvering their competition.

A Brief Overview of Regulatory Operations

The essential responsibility of regulatory operations is to submit regulatory documents to health agencies in a compliant format. The function has been predominantly clerical in nature. Daily tasks consisted primarily of printing, tabbing, volumizing, binding and reviewing copious amounts of paper. Regulatory operations was the housekeeper and the clearinghouse for submissible documents from every department. Given the hundreds of thousands of paper pages (often in triplicate), the role was demonstrably administrative.

Today, with the adoption of electronic submissions, document templates and cloud systems, the role has morphed to require a new set of technical skills, including systems expertise, project management and critical problem solving. This combination of old and
new responsibilities puts regulatory operations in a unique position to provide valuable insights across an organization’s operations.

**Transitioning from a Clerical to a Strategic Function**

Technology adoption has been the single largest driver of change in regulatory operations. Document formatting and quality control provide clear examples of technology’s impact. Traditionally, once document content was considered final, regulatory operations was responsible for formatting and style review, including tedious and painful fixing of font styles, margins, figure and table placements, orphaned sections and header/footer content. Today, third-party electronic Common Technical Document (eCTD) templates have eliminated the majority of manual formatting and publishing activities. eCTD document templates have given back time and resources by providing a cost-effective, compliant and easy method to avoid the significant Word document formatting issues.

Historically, use of submission-compliant templates was low, in part because templates were scattered throughout the organization without central control and enforcement. This was understandable when the organization was using file shares to manage documents instead of document management systems that put the appropriate templates in the hands of each contributor. Needless to say, the management and support of content authors amounted to a full-time position. Content providers can now automate what used to be painful, manual processing after approval. Today, every organization should be using eCTD templates from the very beginning of the document authoring process—there is absolutely no reason not to.

**Figure 1.**

**Gaining Alignment**

The total volume of an original application filing (e.g., NDA) can number in the hundreds of thousands of pages, commonly exceeding one million. To put things into perspective, one million pages, printed and stacked into a single pile, would equal the height of a 24-story building.

A clear understanding by all stakeholders involved in application filings is vital to maintaining critical business-imposed timelines. If team members do not grasp the gravity of how their work quality and adherence to timelines impacts downstream colleagues, they are placing the success of the submission in considerable risk. An essential role of regulatory operations is to provide tools, training, and overall support to submission stakeholders. By also providing an accurate picture of up- and downstream activities and dependencies, operations teams can help break down functional silos and foster true teamwork.

Efficiencies like these have freed regulatory operations professionals to undertake new, expanded roles and responsibilities, including:

- **Process engineer**—asked with ensuring efficient processes are in place and codified within system workflows to produce an efficient, smooth-running submission assembly line.
- **Systems expert**—responsible for applying technology to solve business problems, such as playing a significant role in RIM system selection and user support.
- **Business analyst**—focused on providing insights into the operations and performance of functional areas and service providers across the organization.

**Drive Efficiency as a Process Engineer**

Today’s regulatory operations groups can provide visibility into risks impacting submission timelines. Large original filings can reach vast page counts, meaning even the smallest repetitive issues can lead to major delays in the overall submission. Teams can provide
high-value operational insights by illustrating the cumulative effect of issues that generate rework. Every additional resolution cycle that a document publisher and provider must perform places a burden on the submission timeline. The formula below is one example of identifying ways to eliminate waste.

**The PIST Equation: Calculate Rework and Wasted Effort**

The state of document readiness prior to handoff for publishing is critical to support the organization’s timelines. Regulatory operations teams can estimate the amount of time wasted on rework using a relatively simple formula based on four factors: Pages, Issues, Steps per resolution and Time per resolution (PIST).

- **Pages** = Number of text-based submission pages
- **Issues** = Percent of pages containing issues
- **Steps** = Average number of steps per resolution
- **Time** = Average time per resolution step (in seconds)
- **Rework** = Estimated rework time (in hours)

We can estimate the hours of rework involved in a submission by plugging these variables into the **PIST equation**:

\[
\frac{(P \cdot I) \times (S \cdot T)}{3600} = R
\]

Assuming a constant variable for the number of steps per resolution (such as \( S = 5 \)) and time spent per resolution (such as \( T = 30 \) seconds), the impact on wasted effort becomes evident. An amendment or supplement filing of 5,000 pages requires more than 40 hours of rework if only 20% of the pages require a fix. If we extrapolate this to a large filing, the wasted effort shifts quickly from hours to days.

The PIST equation is perhaps more demonstrative than an ongoing analysis tool, but it reflects how operations teams can provide visibility into quality and performance measures for the broader organization. Operations professionals who have “fought in the trenches” can provide valuable insights into realistic timeline planning and submission management.

**Apply Technology to Solve Business Challenges as a Systems Expert**

The regulatory operations professional has a number of responsibilities and an almost equal number of business systems to support them. Core disciplines fall into a few major categories: document publishing, submission building, navigation creation, quality control, submission validation and dispatch/transmission. By taking greater ownership of Regulatory Information Management (RIM) systems, teams are up-leveling the operating capabilities of their regulatory counterparts and the broader organization. Information is power, but only if it is accurate and current.

Submission document authoring and tracking systems are a clear example of improved operating capabilities. Submission tracking spreadsheets—when built and implemented in isolation—are inherently tedious and error-prone. If you replace a floating, siloed tracker with an electronic Document Management System (eDMS) that also handles data, the pertinent information is tracked automatically and is directly connected to the respective documents. Incorporating the planning and tracking information directly within the eDMS eliminates most of the manual recordkeeping and provides the real-time, high-quality status updates that are so hard to achieve with spreadsheets such as Excel. Business systems not only provide more-accurate and timely tracking capabilities than humans, but also deliver reports and visualizations translating into new visibility and insights.
Technology is a powerful enabler of today's regulatory operations teams. An integrated RIM suite provides a holistic view of information and activities so the organization can work globally and in a coordinated manner. Integrated RIM—particularly when hosted in the cloud where everyone has access—connects the organization. By implementing the right technologies, regulatory operations teams can promote a better-functioning, more-collaborative culture.

**Offer Organizational Insights and Improvements as a Business Analyst**

Regulatory operations teams are at the end of the submission assembly line. Their unique, holistic view extends from content conception all the way through submission. This perspective allows regulatory operations to manage projects more effectively, such as coordinating different work streams to address cross-functional dependencies. (A useful analogy is found in re-modeling a bathroom. You need to schedule the plumber before the electrician, and the electrician before the painter. Any delay upstream forces the painter to get rescheduled.) The scope of planning has expanded from departmental to organization-wide. Variables such as template usage, system user training and standards compliance influence whether a submission comes together as planned or is hopelessly delayed. By studying how submissions have historically progressed, it is possible to foresee when a submission is going to go awry. Regulatory operations teams have become business process engineers by mitigating the effects of content delays and proactively implementing methods to avoid them in the future.

With access to real-time reports about the state of every department’s documents, regulatory operations is aware of which groups are operating efficiently and which are putting company timelines at risk. The team can recognize trends before they become a problem and address them early so deadlines and downstream groups are not impacted. From a tactical perspective, regulatory operations can not only compile a submission and get it out the door, but also add strategic value in helping the organization plan future submissions and execute effectively to meet company goals.
Conclusion

The evolving role of regulatory operations has created new opportunity for both practitioners and organizations. In particular, companies leveraging the modern, tech-enabled regulatory operations professional will be better equipped to achieve their business goals. Today’s professionals are uniquely positioned to anticipate how upstream activities affect overall timeline planning and execution. In order to provide the greatest value, teams will need to implement and select best-in-class technologies supporting their expanded role.

There are still many companies where regulatory operations remains stuck in clerical procedures, particularly, in large established organizations, where the Standard Operating Procedures (SOPs) and work instructions were defined around paper-based processes. Even those companies with electronic documents often continue with paper-based processes because affiliates are not using the content management system. Conversely, when many startup companies begin building teams, they are shifting to a new model and drafting SOPs to fully leverage modern technologies and enable regulatory operations to make more strategic contributions.

Relegating operations teams to yesterday’s tactical activities is limiting the potential of the organization as a whole. In fact, doing so puts submission timelines and therefore shareholder obligations and patient well-being at risk. To optimize the organization’s efficiency and agility, pharmaceutical executives must task their regulatory operations teams to plan, resource and execute for the future and not just the day-to-day.

Welcome to the new world of regulatory operations.

About the Author

Craig Gassman, MS, is associate director of regulatory operations, Karyopharm Therapeutics, Inc. He has more than a decade of regulatory operations experience, including the planning, collaboration and management of eCTD-compliant regulatory filings (IND, NDA, BLA and more). Gassman focuses on the implementation and management of RIM infrastructures to meet current organizational needs while planning for future scalability. Gassman has worked at a number of firms honing his submission project management skills, including, Biogen, Genzyme, Amgen, BioVex and Aveo Oncology. He can be reached at craig.gassman@gmail.com.