intellect

ROI GUIDE

MAKING A CASE FOR MODERN QMS

As a quality management professional, you're already aware of just how important QMS can be to your company's bottom line. But what about the other decision makers in your organization? Do they understand the Cost of Quality (COQ), the Cost of Poor Quality (COPQ), and the economic implications of underinvesting in QMS?

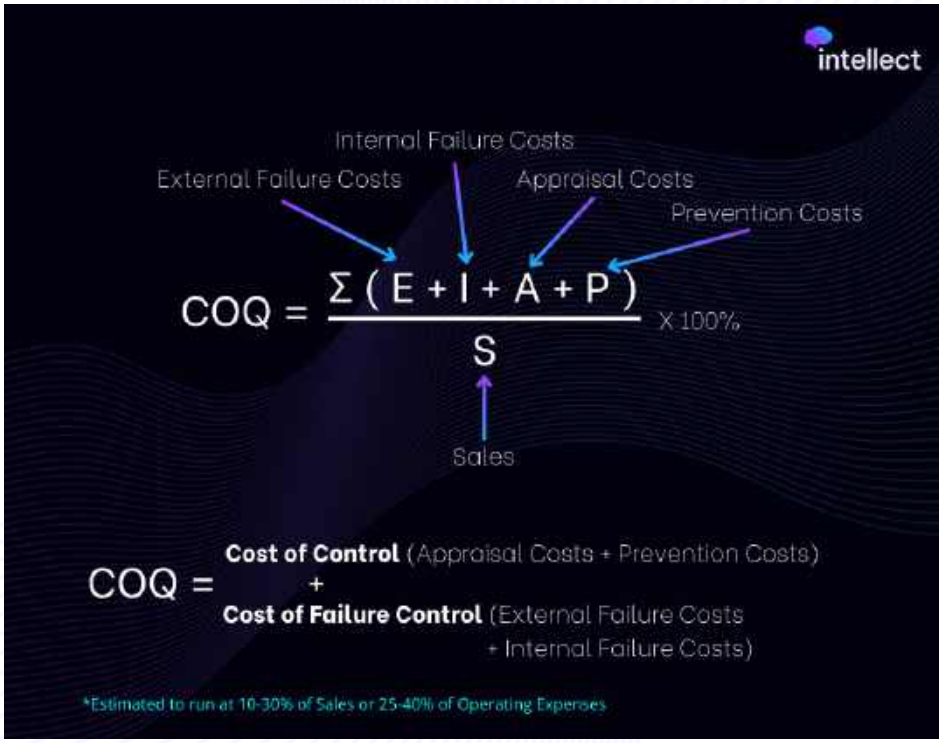
In today's cost-conscious business environment, top management wants to know that the money they're investing in new technology will deliver meaningful results. There's no better way to demonstrate that than with a clear ROI calculation based on the real-world numbers that apply to your organization.

In this guide, we'll offer you step-by-step advice on how to build a solid business case for modernizing and streamlining your QMS technology stack.

THE COST OF QUALITY

Let's begin with a term that is well-known among quality management professionals, the cost of quality (COQ). The concept was first proposed by Armand V. Feigenbaum in a 1956 article in the Harvard Business Review. He argued that the traditional tendency to equate high quality with high costs was flawed. Instead, companies could achieve positive return on their investments in quality management systems and processes.

Feigenbaum offered us a clear formula for COQ, expressed as follows:



In a nutshell, the COQ formula adds the costs of quality management and the costs of quality failures, then expresses that total as a percentage of sales.

The numerator in this formula consists of four components:

- **External failure costs** are incurred when the organization must remedy a problem after the product or service is delivered to the customer. Repairs or non-billable product service, warranty claims, returns, and the cost of managing complaints all fall under this category.

- **Internal failure costs** include waste, scrap, rework of nonconforming product, as well as the costs to identify and analyze causes of failure. Internal failure refers to nonconformances that occur prior to delivering a product or service to the customer.

- **Appraisal costs** include inspection and other measures to determine the degree to which products or services conform to specified quality requirements. Verifying procedures, inspecting incoming materials, rating and managing suppliers, and quality audits are also included in this number.

- **Prevention costs** include quality management systems, processes, planning, training, and any other activity that aims to prevent or avoid quality problems from occurring.

Experts estimate that COQ generally amounts to between 10-30% of sales, or 25-40% of operating costs.

In the late 1980s, IBM quality expert H. James Harrington expanded the COQ concept, coining a new phrase, "the cost of poor quality" (COPQ). He separated out the costs associated with both internal and external failures and labeled this as COPQ. Appraisal and prevention costs, in contrast, were grouped together as "the cost of good quality" (COGQ).

This was an attempt by Harrington to focus attention on the high costs associated with doing the wrong things. His main point was that there isn't necessarily a direct linear relationship between input costs and quality. In other words, he was aiming to dispel the myth that high quality products and services necessarily cost more. By **failing to invest in quality management, companies inevitably incur COPQ costs**, but without adequate systems and processes to measure and monitor quality, they will have limited visibility to those costs.

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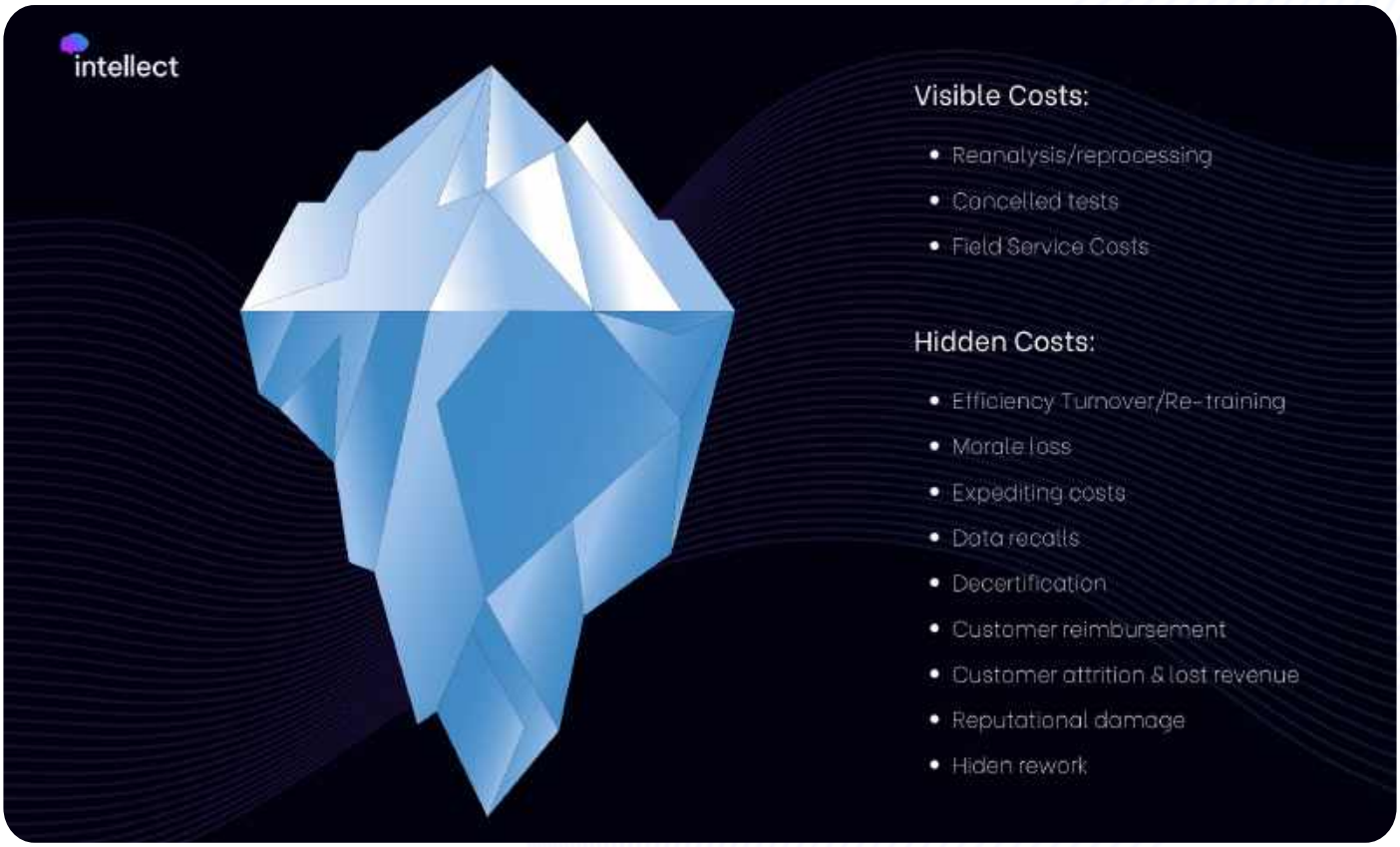
VISIBLE COSTS VS. HIDDEN COSTS

As you're gathering data to calculate COQ, it's important to keep in mind that many of the costs associated with poor quality remain hidden. Some of them, moreover, can be difficult to measure, but are nonetheless very real.

Let's examine some of these hidden costs:



- **Efficiency conversion** loss refers to the "friction" that occurs when processes are not optimized. Addressing efficiency conversion loss within the context of quality management contributes to higher productivity, cost reduction, and improved customer satisfaction.

- **Employee turnover and retraining** increases when engagement levels are low, often spurred by the lack of a common purpose or mission. QMS helps to increase employee engagement, decreasing turnover and onboarding/training costs.

- **Loss of morale** often arises when individuals and teams feel that the work they do is not meaningful. A strong culture of quality increases employee commitment and improves productivity.

- **Expediting costs** are often used as a means of remediating customer complaints that arise from quality issues.

- **Data recalls** typically occur when errors in the collection, processing, or interpretation of data are discovered, potentially leading to incorrect conclusions, flawed product designs, or inaccurate reporting. At best, this carries an opportunity cost. At worst, it leads to large-scale quality failures.

- **Decertification** by a recognized certifying body can occur when an organization fails to maintain required standards, potentially leading to lost credibility, reduced customer trust, and exclusion from supply chains that require certified quality management systems.

- **Customer reimbursement** is presumably easy to measure, but may not be directly accounted for in the cost of poor quality. It is usually accompanied by some reputational damage, which is far more difficult to measure.

- **Customer attrition & lost revenue** may happen on a piecemeal basis, or at scale. In a best-case scenario, customers may seek alternate sources of supply while continuing to do business with your company. At worst, your firm could lose strategic customers, leading to a substantial drop in revenue.

- **Reputational damage** resulting from poor quality and lost customers can make it difficult to win net new business as well. It costs significantly more to win a new customer than to retain an existing one.

- **Hidden rework** occurs when production teams must expend additional resources correcting errors or defects. When this type of rework occurs without the explicit knowledge of management or otherwise falls outside the formal quality control processes, the associated costs may never be acknowledged.

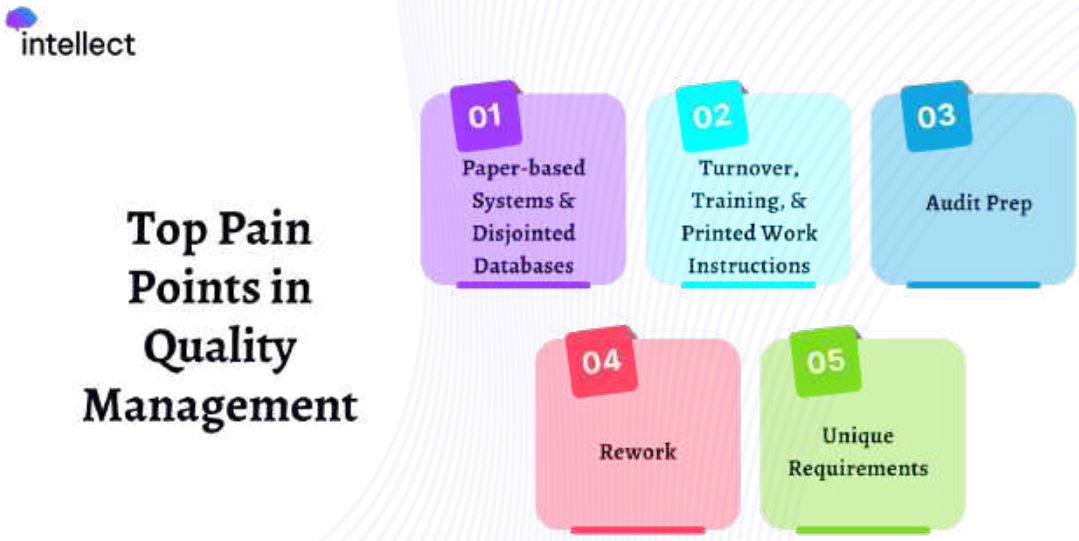
Depending on the systems and processes in place, some organizations may have visibility to some of these costs and lack measurement for others.

Generally speaking, though, the most easily visible costs are associated with COGQ. In other words, proactive quality management in the form of appraisal/inspection and prevention/correction action costs money, and those expenses show up clearly on the financial statements. COPQ, in contrast, tends to include a mix of both visible and hidden costs.

As you make your case for investment in modern QMS technology, it's important to shine a spotlight on those hidden costs, highlighting the tangible value that quality management adds to your organization.

TOP PAIN POINTS IN QUALITY MANAGEMENT

At Intellect, we work with customers across a range of industries, including automotive, chemicals, aerospace & defense, cosmetics, testing labs, and general manufacturing. We see a host of common pain points across these various industries, as well as some that are specific to certain sectors and regulatory environments:



- **Paper-based Systems and Disjointed Databases:** In the early stages of growth, most companies start out with paper-based systems, Excel spreadsheets, and homegrown databases. They often store documents on shared servers, where multiple people have access to the same files. Version control can be especially challenging under these conditions, and getting approval signatures is a hit-or-miss proposition. If the organization maintains paper file copies of those documents, it can be a full-time job keeping everything current. The same is true of paper-based training records, inspection forms, and other quality management records. If you want to run reports on that data, then someone needs to key it into a computer, which takes time. If pages are lost, or if data is entered incorrectly, accuracy suffers. Companies with multiple locations and/or subcontractor facilities face even greater challenges managing this kind of information. The fundamental problem in many organizations is simply that quality management data and documents are scattered far and wide.

- **Turnover, Training, and Printed Work Instructions:** In the face of a very tight labor market, many organizations are struggling to manage their workforce effectively. Temporary workers often receive on-the-job training, with little in the way of formal training or printed work instructions. That can lead to both quality and safety issues. Organizations that enjoy a more stable workforce tend to have more formal procedures and documentation in place. Even then, however, most companies can benefit from streamlined and automated procedures for onboarding, training, and certifying employees.

- **Audit Prep:** Managing documents, tracking revisions, collecting data, and collating reports all require a substantial commitment of time and resources. In many organizations, manual processes are prevalent, so there is often a single detail-oriented individual who holds it all together and seems to know where everything is. When it's time to prepare for an audit, the vast majority of that work falls on the same person. They know where to find everything, they're familiar with all the exceptions to the rule. Occasionally, that person can call upon a floor manager to assist, but the end-result is usually the same: Every audit is a fire drill, and the organization is utterly dependent on that one key employee.

- **Rework:** If nonconformances are a common occurrence, then rework consumes an inordinate amount of staff time and resources. In many organizations, training issues are an important root cause. At the same time, if adequate CAPA processes are not in place, it can be very difficult to ever improve the situation.

- **Unique Requirements:** Every business is different; quality management processes are never a one-size-fits-all proposition. Most QMS software is prescriptive by nature; it assumes certain standards and processes that don't necessarily work well for every company or industry. That leaves most quality management teams in a difficult position. They can continue to work with generic tools that offer some flexibility but lack the unified approach and QMS features that they need, or conform to someone else's notion of what QMS should look like. Custom-coded software is an option for companies with relatively deep pockets, but it's too expensive, risky, and time-consuming for most organizations. Configurable QMS software offers a simple, straightforward path to solving this problem. We will discuss that in detail later in this document.

In fact, the right QMS software can address all of these issues by offering a unified platform for quality management data, collaboration features and automated workflows, document management with built-in version control, mobile device support, and extreme configurability to adapt to an organization's unique needs quickly, easily, and inexpensively.

BUILDING YOUR BUSINESS CASE FOR QMS INVESTMENT

Feigenbaum, Harrington, and countless other quality management experts have documented the clear economic benefits of QMS. Yet top executives may be unaware of those advantages. As generalists, many business managers have a limited understanding of quality management. Without exception, however, they respond to compelling dollars-and-cents arguments that increase the bottom line.

If your organization is experiencing any of the challenges noted above, it's worth your time to document the cost of quality and estimate the potential ROI of a proposed investment in new technology. It's also worth detailing other benefits that may be difficult to quantify and measure, but which improve outcomes indirectly.

As such, we recommend building a business case that focuses on measurable costs and benefits. It's also worth laying out the various factors that may be harder to quantify, though. A culture of quality, for example, increases employee engagement, which in turn drives higher productivity. It's worth making that case, provided that the primary focus is on measurable dollars-and-cents outcomes.

Let's begin with the so-called hard numbers first:

- First, identify and track **external failure costs** by summarizing repair costs, non-billable product, warranty claims expense, product returns, and the costs associated with managing customer complaints. Many of these will already exist as a component of your organization's general ledger.

Work with your accounting and finance team to determine which line-items are currently tracked and reported. Then ask for assistance in estimating or tracking those cost categories that are not already included in this list.

- Next, perform the same exercise with internal failure costs such as waste, scrap, and rework. Again, the accounting team might be helpful in assembling the necessary data. It's important, though, to also work with your production and delivery teams to **determine which costs might currently be hidden**. In that case, collaborate with those leaders to begin tracking those hidden costs or estimate those individual factors.

- Next shift to COGQ, starting with appraisal costs. As a quality management leader in your organization, you should already have an idea of what it costs to inspect product, evaluate services, inspect incoming materials, and manage quality audits.

- Finally, calculate the various prevention costs associated with quality management systems, processes, planning, training, and similar activities. Again, this may require some collaboration with the accounting department, as well as some careful estimation to determine total prevention costs.

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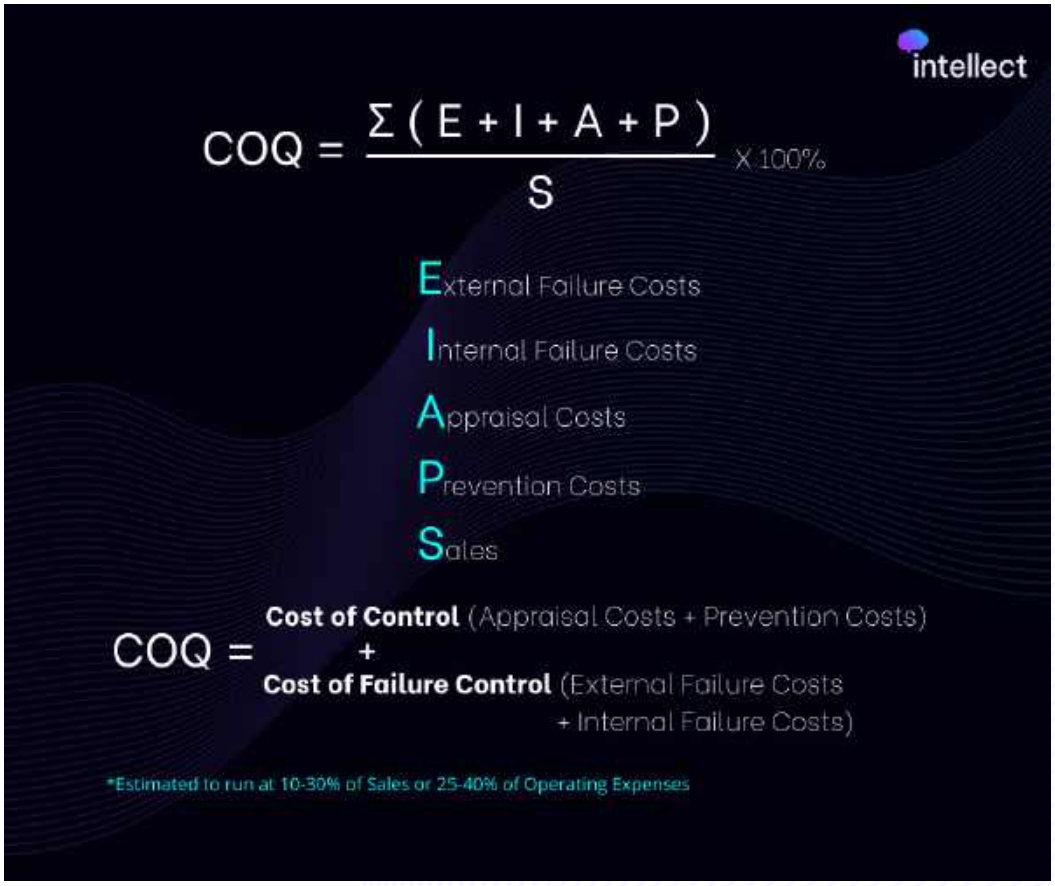

Having calculated the cost of quality for your organization, the next step is to determine how your investment in new technology might change that number. It can be helpful to lay out a list of key "current and future" criteria that are important to your organization. For example, if you have specific targets for reducing scrap through tighter maintenance schedules, specify those. If you're aiming to reduce audit findings, offer a target number.

Going through the details that comprise the four components of COQ listed above, consider which line-items might improve after implementing a new QMS system. Recalculate the COQ using those newly revised numbers.

For example, a more efficient QMS system reduces the time it takes to create new documents, manage multiple versions, and file or retrieve that information. Automated workflows decrease the time it takes to chase down the person responsible for the next step in a process. Supplier management software streamlines the process of defining and codifying standards, documenting compliance, recording nonconformances, and updating information.

Although it can be difficult to estimate the expected changes with a high degree of accuracy, it's imperative if you want to build a clear and compelling business case. By estimating time saved and applying an imputed hourly rate, for example, you can start to put some numbers around the cost of lost productivity under your current systems.

Calculate your estimated COQ after implementing your new systems and compare that to your current COQ. The difference between the two is your ROI, expressed as a percentage of sales.

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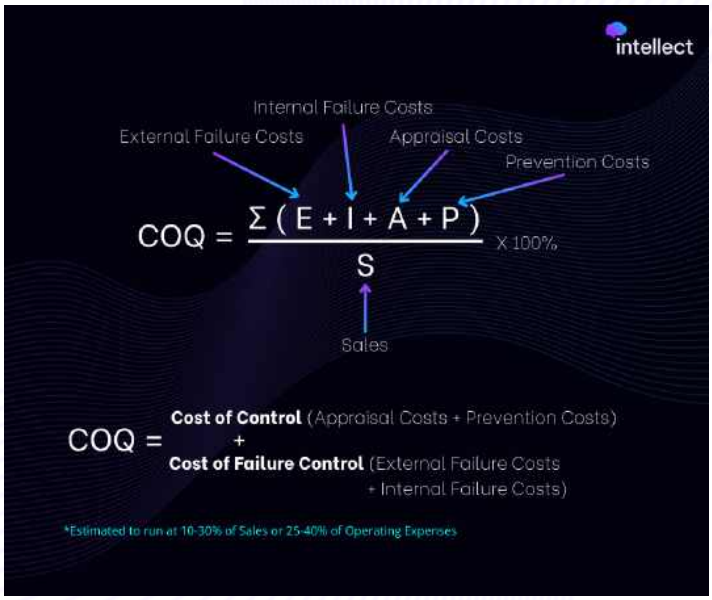

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SOFT COSTS AND BENEFITS

While we recommend focusing on the numbers, it's also worth taking some time to explain the soft costs associated with your current systems, and the potential benefits of investing in new QMS technology. Start with the list of "hidden costs" described earlier in this document and provide a short narrative on each of the items that is not included in your quantitative analysis.

Here are two brief examples:

Management visibility to quality management metrics: When managers have real-time quality intelligence, custom-tailored to their individual needs, they can respond quickly and efficiently when action is required. The proposed QMS software offers customizable executive dashboards that enable authorized users to trigger quality processes quickly and easily from a single pane of glass. That leads to better information, faster response times, and improved productivity.

A culture of innovation: By advancing the company's level of maturity in quality management practices, we can accelerate our existing culture of constant improvement and innovation. With better access to a unified set of data, for example, we can gain improved visibility for root cause analysis, collaborate across multiple teams, and drive innovation.

Even though these so-called "soft" factors are hard to measure, it's important to include them as part of your business case. Although they are difficult to quantify, they can be extraordinarily meaningful to your organization.

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THE INTELLECT QMS PLATFORM

As you explore your options for modern, connected, AI-enabled QMS, we hope you will consider evaluating Intellect’s award-winning QMS platform.

Intellect’s cloud-based QMS offers 30 out-of-the-box applications for document management, CAPA, supplier management, employee training, and much more. Mobile apps, executive dashboards, and automated workflows make your employees more productive and collaborative than ever before.

Our platform is built for extreme configurability, with no-code workflows, drag-and-drop configuration, and unlimited capacity for bespoke apps. Intellect’s customers value our QMS for its extreme adaptability, allowing non-developers to easily create modifications and unique workflows.

If your organization is seeking QMS software that offers flexibility, ease of use, and outstanding customer service, we’d love to talk.

Contact us today to find out how we can help you achieve your goals.

Request a Demo!