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BALANCING THE COST OF QUALITY, IT INVESTMENTS & INTEGRATED QMS

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IT INVESTMENTS & INTEGRATED QMS



In today's global manufacturing industry, balancing the cost of quality, IT investments, and integrated QMS (quality management systems) presents as a never-ending series of challenges for your company. Cost of quality is arguably one of your organization's most important holistic metrics, but too many organizations have neglected the complex interplay between investments in good quality and the hard costs of poor quality.

SEEKING BALANCE IN COST OF QUALITY:

In all likelihood, your organization already spends a great amount of resources (labor and technological) on measuring the cost of poor quality as accurately as possible. Issues arising from an increased number of defective product returns, warranty issues and, in the worst-case scenario, global recalls are the most visible (and financially damaging) components of the cost of poor quality. With seeming regularity, severe quality issues make international headlines as defects surface years after products have reached the open market.

Within your company, the cost of good quality (i.e., investments in prevention and appraisal) very likely has a subordinate status to the cost of poor quality. According to research by the Aberdeen Group, award-winning, best-in-class manufacturers, on the other hand, pay just as much attention – if not more so – to investments in the

cost of good quality to improve visibility of quality throughout the enterprise. Striking a delicate balance between the cost of good quality and the cost of poor quality is an ideal that few organizations achieve on a regular basis.

IT'S CRITICAL ROLE IN GAINING EXECUTIVE BUY-IN:

The need to continuously improve your organization's cost of quality metrics is clear, but why does upgrading a quality management system encounter so much resistance from upper-level decision makers? The answer is that to implement an integrated quality management solution effectively, you need to win buy-in from all stakeholders, particularly stakeholders in your company's IT department. The fact of the matter is that IT, too, has been forced to do more with less resources, which makes maximizing returns on previous technology investments all the more critical.

In essence, the approval channels for new software tools become gridlocked as indecision between quality departments and IT leads to too many manufacturers delaying the implementation of an upgraded quality management system. Of course, everyone can agree that quality should be a concern throughout the enterprise; research has shown that companies that cultivate a culture of quality outperform their peers. However, only the top performers have realized synergies between IT and quality manage-

ment, which can lead to reductions in cost of quality via timely investments in the cost of good quality.

ALIGNING QUALITY AND IT:

Quality departments and IT departments must come together to bring the promised cost savings of integrated quality management systems into the real world of global manufacturing. Unfortunately, the workflow between your department and IT may be less than ideal, which is actually a common pain point in the manufacturing industry at large. In the end, gridlock sets in as indecision within your organization's leadership structure, quality department, and IT department delays even the most well-planned quality management initiatives.

This paper aims to give you a different perspective on both components of cost of quality and the adverse effects of delaying the implementation of an integrated quality management solution. If your organization can make timely decisions on improvements to quality management's software tool set, you will be able to capitalize on the opportunities and competitive advantages of holistic, integrated, and closed-loop quality management. The next part in this paper will cover a subject that should be all too familiar to your organization: the cost of poor quality in manufacturing.

WHAT IS THE COST OF POOR QUALITY?

So, what is the cost of poor quality? Placing the cost of poor quality in context to all stakeholders (particularly, stakeholders in IT) requires that you be able to turn to the right data at the right time to make your business case. The cost of poor quality (i.e., scrap, rework, returns, external failures, and so on) can give upper-level decision makers a stark reminder of the cost of neglecting quality from an enterprise point of view. As such, these metrics are critical to making your business case, but they should not overshadow other variables in the overall cost of quality equation.

CONTEXTUALIZING COST OF POOR QUALITY:

The costs of poor quality are very high-profile, and speaking broadly, they are well understood by researchers, for the most part. The hard statistics vary from sector to sector, but the overall trend is clear: cost of quality rises substantially as defects come to light closer to the consumer. Conversely, cost of quality is most favorable as quality issues surface earlier in the value chain. The need to mitigate nonconformances as early as possible is clear.

IT's role in enabling timely resolution of quality concerns is key to your organization's quality management success. Without the ability to sift through accurate historical data to pinpoint root causes, any quality management professional would struggle to identify and mitigate issues consistently before products move through the value chain. Unfortunately, it is at this point where the shortcomings and limitations of your company's current IT infrastructure and software suite may come into play, and the real-world situation is too often very less than ideal.

In recent times, research by the Aberdeen Group has shown that a significant amount of organizations still struggle to effectively measure quality metrics. You may view this finding as contradictory since your organization has likely made very substantial investments in new technology and IT architecture over the last few years, specifically to address this issue. Your organization's cost of quality metrics tie directly into IT's ability to deliver timely and accurate data to the right personnel before products move on to manufacturing and downstream to the consumer.

IT SPRAWL AS A REAL PHENOMENON:

As a quality management professional, you should never forget that IT sprawl is a very real phenomenon, particularly among large enterprises with multiple manufacturing sites and offices around the world. Today, critical quality

management related data may reside in fragmented silos of data sources, enterprise applications and proprietary (i.e., expensive to maintain) solutions. Integration is absolutely critical to success in today's leaner manufacturing environment.

Integrating an IT architecture of such complexity is a daunting task, to say the least. Truly, your organization may be very efficient at collecting and storing financial data and quality management related data, but consolidating additional disparate data sources in the face of emerging quality management issues leaves much to be desired in today's manufacturing environment. In the end, your company may rely on wholly paper-driven processes to pinpoint and escalate quality management concerns to upper-level decisions makers, which allows inefficiencies to dilute quality management processes overall.

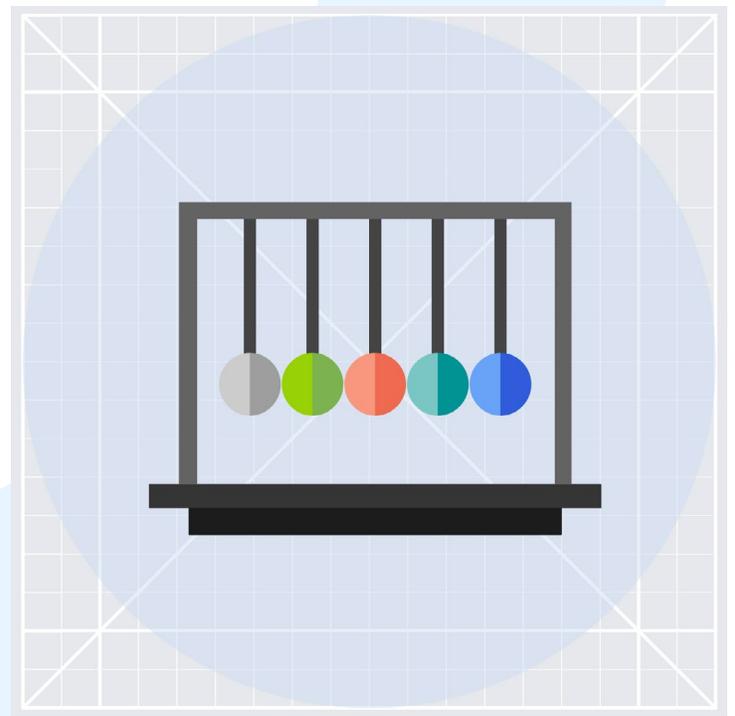
IMPROVING THE ACCURACY OF DATA TIED TO THE COST OF POOR QUALITY:

In one worst-case scenario, less than ideal IT systems may actually be the root cause of quality issues, especially with respect to an extended supply chain. The fact of the matter is that your organization may not have the most optimal IT architecture in place to collaborate among supply chain partners very effectively – if at all. Your company may be missing a very important piece of the quality management puzzle: real-time visibility into supplier quality concerns.

As such, your organization may not be measuring cost of quality as well as you might assume. Large, incredibly complex enterprise software systems require careful implementation (and proactive maintenance) to ensure that all components of the software stack can coexist peacefully and at a reasonable cost to executives.

Context is key when discussing the cost of poor quality to stakeholders in IT since these data often reside in silos of applications that are not inherently interoperable. For example, your enterprise's software stack may include multiple ERP or MOM instances among disparate manufacturing sites as the result of mergers and acquisitions activity. In a data-saturated manufacturing enterprise, critical quality management intelligence may fall between the cracks of your organization's disjointed corrective and preventative actions processes, thus having an adverse effect on the cost of poor quality overall.

Today, data quality is a mission-critical endeavor. Without timely, accurate, and ideally, real-time visibility into quality management issues throughout the value chain, your organization may see minimal gains in cost of poor quality metrics. An integrated quality management system is one strategy to consider in the face of such challenges. So, to add to the conversation, the next part of this paper will delve into the cost of good quality.



WHAT IS THE COST OF GOOD QUALITY?

To enable integrated quality management principles throughout your organization, you should keep the cost of good quality in focus. Manufacturing enterprises today spend a great deal of time and effort aligning quality management data with the right suite of enterprise software and infrastructure. Not surprisingly, the high-profile costs of poor quality have influenced the deployment of IT resources disproportionately, particularly in an intricate software stack. So, what is the cost of good quality?

TARGETED INVESTMENTS IN THE COST OF GOOD QUALITY STRIKES BALANCE:

Manufacturing industry leaders, according to multiple studies by the Aberdeen Group, learn to balance the cost of poor quality with targeted investments in the cost of good quality. A company's position in the global supply chain and its specific sector within the manufacturing industry often dictates exactly where companies make these investments in technology. For example, a discrete manufacturer in the automotive industry would certainly find much value in integrating ERP, PLM, and quality management solutions.

When seeking buy-in from relevant stakeholders in IT, you should always remember that the cost of quality components are not linear. The savings to be had from spending a single dollar on improving appraisal and prevention processes does not equate to a \$1 reduction in the cost of poor quality. In the real world of fast-paced, global manufacturing operations, the relationship is far from 1:1. In fact, investments toward the cost of good quality tend to have a multiplier effect that create synergies in quality management processes and IT processes, too.

INVESTMENTS IN THE COST OF GOOD QUALITY CREATE EFFICIENCIES:

Surely, justifying the implementation cost of an integrated quality management solution is a tall order in any corporate setting. It takes time to move a project through all of the necessary approval channels, which places the onus on easing organizational gridlock between quality departments and IT departments. Paying careful attention to the cost savings, efficiencies, and synergies (sometimes counter-intuitive to popular thinking) created by targeted investments in the cost of good quality is one strategy your organization should strongly consider moving forward.

Implementing an integrated quality management solution is one way to enable synergies and efficiencies in non-conformance management, corrective and preventative actions, supply chain management, and even statistical process control. Recent studies by the Aberdeen Group and LNS Research paint a very favorable picture for manufacturers that lean on quality management from an enterprise point of view. The clear trend is that investing in the cost of good quality pays for itself in cost savings and efficiencies in calculating the cost of poor quality more accurately.

A LOOK AT THE NUMBERS:

A recent study by LNS Research unveiled a few stark findings. Organizations that manage to improve real-time visibility of quality management metrics show a 6.5% increase in overall equipment effectiveness, one of the most key quality management metrics of all. Truly, investments in the cost of good quality are not linear when compared to reductions in the cost of poor quality.

Along those lines, the Aberdeen Group's survey "A Fresh Look Into Cost of Quality" can provide your organization

with plenty of food for thought. The results of the survey indicated that balancing both components of cost of quality via targeted investments can lead to higher operating margins versus corporate plans.

Specifically, the survey divided manufacturers into “leaders” and “followers” as the top 33% of high performing companies comprised the “leaders” category. For “leaders,” according to Aberdeen’s survey, new product introduction rates are 13% higher. Similarly, the rate of on-time and complete shipments rose 3%. Savings of this magnitude do not materialize simply by reducing the cost of poor quality. Investments in the cost of good quality are critical. From a different perspective, best-in-class manufacturers in Aberdeen’s study were far more likely to leverage an improved corrective and preventative actions process as a means to invest in the cost of good quality. Truly, investing in prevention has a markedly positive effect on appraisal and inspection costs. The issue at hand is that your organization’s IT architecture must be able to accommodate the addition of an integrated solution into its software stack.

QUALITY AND IT MUST HARMONIZE TO GAIN EXECUTIVE BUY-IN:

Previously mentioned, the connection between IT sprawl and the cost of poor quality stepped forward as one of the pain points that contributes to indecision in investing in the cost of good quality. Taken a step further, having a sound software implementation plan in place can put stakeholders in IT at ease when trying to break through the gridlock in your organization’s approval channels.

Knowing exactly where to look for efficiencies among disparate quality management processes will also help to ease internal gridlock with IT. For instance, your company may rely heavily on PLM solutions yet struggle to integrate these data sources with other elements in your quality management system. An integrated quality management

solution can extend PLM capabilities and, essentially, lead to PLM-based corrective and preventative actions to lower the cost of quality overall.

In essence, making investments in the cost of good quality enables synergies across your organization’s quality management processes, which can then lead to the development of a truly closed-loop quality management system. The opportunity to differentiate your company from competitors is too attractive to bypass. In the final section of this paper, you will gain a better understanding of why delaying a decision on an integrated quality management solution can actually be detrimental to your enterprise’s competitive position.

THE COSTS OF NOT INTEGRATING QUALITY WITH BUSINESS SYSTEMS:

The costs of not integrating quality with business systems revolve around lost opportunities to streamline IT’s capabilities. A fully integrated quality management solution affords you the benefit of enabling your organization to balance the cost of quality holistically and dynamically. The problem is that stakeholders in IT may offer some resistance as the limitations of your IT architecture become apparent.

UNDERSTANDING IT’S PAIN POINTS IS KEY TO STAKEHOLDER BUY-IN:

Surely, adding another enterprise application to IT’s heavy workload is not ideal from the perspective of cost-concerned decision makers. The time-to-value of investments in IT parallels the time-to-value of investments in quality management. As such, your mutually beneficial relationship with stakeholders in IT is absolutely critical to making your business case a success.

Complex enterprise software implementations simply take time to get right. Poorly planned software implementations are notorious for raising costs throughout the enterprise. Further complicating the issue at hand, enterprise IT is in the midst of a fundamental paradigm shift.

Today, the order of the day for IT departments is to shepherd companies through the convergence of mobile, cloud, and IT consumerization. The age of “Big Data” only adds to IT’s conundrum, too.

In the manufacturing industry, with the anticipated influx of high volume, incredibly varied data has forced the hand of IT departments to seek cost-cutting solutions. IT must find ways to collect, store, and analyze enormous data sets in the most cost-effective way, and too often, these pain points create friction between cross-functional quality management processes.

The real costs associated with manufacturers’ inability to decide on improved quality management directly relate to increased operating and maintenance costs in IT. The old paradigm of simply adding more computing and software resources to enterprise IT architecture has been called into question as the costs are simply too high to maintain over the long term.

A full “rip-and-replace” scenario is certainly not feasible from a cost perspective, and organizational gridlock only adds to the cost of implementing new technology and software in the enterprise. The initial cost of implementing an integrated quality management solution pays your company back via savings in the cost of poor quality. To break the gridlock, you need to communicate this reality to stakeholders in IT to justify the implementation efforts.

FOSTERING A SOUND COLLABORATION BETWEEN IT AND QUALITY MANAGEMENT:

IT spends a significant portion of its budget simply maintaining the infrastructure and software already in place

throughout the enterprise. These costs are real. To ease the gridlock between your department and stakeholders in IT, you must foster a sound, collaborative culture around quality.

Delaying the decision on improved quality management solutions only allows inefficiencies in your current IT architecture to persist, thus devouring the cost savings of investments made in the cost of good quality. You should know that it is in IT’s best interest to heed your recommendations for an integrated software solution because integrated processes lower overhead costs.

The reality on the front lines of IT may not coexist with the reality of your company’s quality management deficiencies. Sprawling IT systems become expensive to maintain, and from the perspective of stakeholders in IT, you must be able to show that the integrated quality management solution you chose will not add to the burden.

This paper highlighted the real price of indecision when escalating a quality management project through approval channels. IT should no longer be an organizational bottleneck when it comes to making the business case for quality management software. The reality is that both quality management and IT can benefit from an integrated software solution to facilitate better workflows and exchange of time-sensitive quality management data.

The benefits of software may seem intangible, but to stakeholders in IT, the potential to simplify IT architecture with an integrated solution to bridge gaps between enterprise applications is too great to bypass. The real costs associated with indecision encroach into the IT domain, which is why easing gridlock between your department and stakeholders in IT is critical to making your business case a success.

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