Go Beyond Basic:

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Bluestreak QMS+MES Additive Manufacturing

the Top Pitfalls of Superficiality in Quality Management Systems

Avoid



Introduction

su-per-fi-ci-al-i-ty sü-pər-fi-she-'a-lə-te

Superficiality is an interesting word, especially when you contrast its definition from a quality management system perspective. Here are some of the definitions:

- Vocabulary.com: "shallow; affecting only the surface layers of something".
- Oxford Learner's Dictionaries: "not being careful; only considering what is obvious".
- The Free Dictionary: "apparent rather than actual or substantial".
- Cambridge Dictionary: "not important or complete; involving only the most obvious things".

When thinking about your current Quality Management System (QMS), do any of the characteristics mentioned above describe any aspect of your QMS?

For the majority of companies I have spoken with over the years, this has been the case. And, a few companies I have talked to recently told me their motivation for looking at new QMS-related software was to speed up production primarily by eliminating some steps and making things easier for their production workforce. If you have an over-simplified QMS you are most likely operating your business with superficiality.

The High Stakes of Superficial Quality Management

Many businesses, driven by the need to meet tight production schedules, faster turnaround times, and stringent compliance requirements, often attempt to streamline their operations by choosing simplified Quality Management Systems (QMS) or Manufacturing Execution Systems (MES). These systems are marketed as offering a quick fix to production challenges by reducing production time and simplifying processes. However, the reality is that over-simplified systems often prioritize speed over quality, leading to costly pitfalls. What benefit does your company gain from completing work faster if it's not done correctly?

The True Cost of Settling for Simplistic Solutions

In the high-stakes world of quality management, compliance isn't just a goal—it's a mandate. If you're a quality professional responsible for ensuring stringent audits, producing top-notch parts, or returning service-treated products to satisfied customers, you've likely encountered the pitfalls of settling for superficial Quality Management Systems (QMS).

This eBook will guide you through the top pitfalls of superficial QMS solutions, revealing how simplistic approaches can result in:

- Increased costs
- Production delays
- Audit nightmares
- Poor data protection/cybersecurity practices
- Reputational damage
- And more





Discover the significance of robust, comprehensive QMS + MES software that can manage key product decisions in real time, avoid costly errors, and streamline operations with automated processes.

Two key questions:

- 1. Are fewer software clicks for your production staff more important to speed up jobs?
- 2. Is quality management, individual accountability, and preventing rework more important so jobs get done right the first time?

If you chose #1... by eliminating key quality checkpoints and sign-offs, your software is making very risky assumptions that will ultimately hurt your business. These questions underscore the trade-offs between operational efficiency and the enduring value of quality, framing a fundamental discussion about the priorities that will define a company's production strategy.

Navigating the Pros and Cons of Automation

Today's modern Quality Management Systems (QMS) are increasingly leveraging automation technologies, especially on the production floor. This integration aims to streamline operations by automating data capture, process monitoring, and compliance checks, thus reducing human error (from using hand-written forms) and increasing efficiency. Automated workflows can now ensure that steps in the manufacturing process adheres to predefined quality standards, with systems automatically flagging deviations for immediate correction. This capability not only enhances the reliability of the manufacturing process but also boosts overall productivity by enabling a more seamless flow of operations.

When upgrading or choosing your QMS software in the pursuit of modern digital transformation, exercise caution. If software automation is overdone, it can undermine effective quality management, compromise quality assurance/quality control (QA/QC), and diminish individual accountability among production personnel. Your production control and quality management software should make it easy for your plant workers to do what they do best in their particular areas of processing. It should collect all the required information electronically, so there is no question about how a job step was processed and completed, with the appropriate sign-offs and automatic compliance assurance documentation collected as the job is moving through the production floor towards completion.

There's a fine line between excessive software automation and effective quality management. Manufacturing and service-based manufacturing companies and job shops, such as heat-treating, coating, plating, surface finishing, fabrication, and forging, are always seeking ways to streamline and improve production processes through process transformation. This can involve transitioning from paper-based to electronic job travelers or adopting new computer-based technologies to increase efficiency.

However, beware! Each company takes a unique path as it navigates the complexities of its specialized industry. Even if two companies offer similar services and use identical equipment, their approaches may vary. For instance, one company might incorporate additional operational steps into its overall part process and use software to track each step on the production floor, including time/date stamps, load counts, labor counts, and quality data collection.

Inadequate Outcomes

While it's crucial to systematically track these steps, ensure you're focusing on those that directly impact the finished product's quality. Excessive automation without proper quality management can result in missed non-conformances, reduced accountability, and compromised production standards.

Simplified QMS software can lead to inadequate outcomes, with notable downsides.

Inadequate Coverage

Over simplification of processes to reduce clicks and speed up workflow, can lead to quality gaps.

The presumption that processes are always performed correctly without the need for rigorous verification or oversight can result in systemic failures and product nonconformities. Major issues arise when a simplified QMS does not incorporate comprehensive checks or balances to veri-

fy that each step of the manufacturing process is executed correctly. For instance, in the majority of part manufacturing, the assumption that machines are always calibrated correctly could lead to the production of parts that do not meet tolerance specifications. Over time, this can result in increased failures in the final product and not only impacts product reliability but also safety.

Moreover, assuming that production steps are always executed accurately can bypass critical control points meant to catch errors before they propagate through the production line. For example, if a metal stamping process is presumed to be flawless, defects like improper material thickness or incorrect die alignment might not be identified promptly. These defects, if unchecked, can lead to large batches of non-compliant products, necessitating costly recalls and rework, and potentially damaging the manufacturer's reputation.

Manufacturing processes can drift due to changes in raw materials, environmental conditions, or machine wear. A robust QMS would typically include protocols for regular review and adjustment of processes. Without these, a manufacturer may continue to operate under the false belief that their processes are stable, potentially leading to significant quality deviations, failure to meet customer specifications, external audit findings, loss of new contracts, etc.

Lacks Depth and Breadth

Over simplification can often be insufficient for meeting the nuanced and specific compliance needs of customer requirements due to its reliance on generic templates and a one-size-fits-all approach.

Such software typically provides basic frameworks and templates designed to cover a broad spectrum of industries and processes. However, this generality fails to address the unique challenges and specific standards that are required in different sectors of manufacturing.

For example, in the aerospace manufacturing sector, where compliance with stringent standards like AS9100 is required, generic QMS templates might not include detailed workflows or documentation



protocols that align with aerospace-specific regulations, such as those related to traceability and part validation. This oversight can lead to gaps in compliance and the inability to provide evidence during audits that all specific regulatory requirements are being met and leave manufacturers <u>vulnerable to unforeseen</u> <u>problems</u> that could have been mitigated with more robust, industry-specific QMS tools. **You cannot cut corners if you want to be known for high quality and compliance.**

Risk Management Failures

Risk identification and assessment fail to capture potential risks leading to non- conformances and bottlenecks.

When QMS software does not provide real-time tracking and analysis, it fails to capture immediate data on process variations, equipment malfunctions, or deviations from standard operating procedures. For



instance, in an assembly line for electronic devices, if the soldering temperature drifts outside the optimal range, a sophisticated QMS would detect this anomaly instantly and trigger alerts. However, a simplistic system might miss this deviation, resulting in a batch of products with poor soldering quality, which could lead to increased failures in final product testing or even in customer hands. Lack of real-time data prevents Quality Managers from responding promptly to issues as they arise. This delay in response can exacerbate small issues, turning them into significant bottlenecks. If a critical machine starts producing off-spec components and the issue is not identified and re-

solved quickly, it could cause a backlog in production, impacting delivery timelines and increasing costs due to wasted materials and time. It is imperative that advanced risk assessment tools predict potential failures before they occur by using historical data and predictive analytics to forecast likely problems based on patterns and trends, allowing preventative measures to be put in place.

110 Compliance Statistics to Know for 2024

According to the 2023 <u>Navex Global report</u>, only 6% of risk and compliance professionals describe their compliance programs as mature. This lack of maturity often results from QMS solutions unable to scale with business growth.



Scalability Issues

Struggling with complex jobs and failing to meet changing requirements.

Flexibility and functionality is mandatory to handle advanced quality checks, adapt to unique customer specifications, and respond to changing industry standards or customer demands on the production floor. The limitations of a QMS often arise from its foundational design, which is typically generic and not customized to meet the specific needs of modern production floor environments. This generic approach fails to address the complexities that contemporary production settings demand.

In industries like automotive or aerospace manufacturing, where precision and adherence to exacting standards are crucial, a simplified system may not support the intricate quality checks required for parts that must meet rigorous safety and performance criteria. Such software might be unable to integrate with advanced diagnostic tools or capture the detailed data needed for complex analyses, like stress tests or compliance checks against evolving safety regulations. Plus, individual customers may have specific demands regarding product specifications, packaging, or batch testing, which can vary significantly from one order to another. Not having the capability to adjust workflows or documentation processes to cater to unique specifications may lead to errors in fulfilling customer orders and, consequently, customer dissatisfaction and potential loss of business.

As new technologies emerge and markets evolve, manufacturers must adapt their processes quickly to remain competitive and compliant. QMS software, must have the agility to <u>accommodate new standards</u> or <u>incorporate the latest best practices</u>. This rigidity can result in a manufacturing operation that lags behind industry advancements, fails to meet new regulatory requirements, or cannot leverage new technologies to improve product quality and operational efficiency.

Certification and Audits Risks

Incomplete and Inconsistent Documentation

Incomplete or inconsistent documentation can have significant repercussions on the production of quality finished products and the ability of a company to pass regulatory audits. When documentation is superficial, key details about processes, quality controls, and compliance measures may be omitted or inaccurately reported. This lack of precision can lead to inconsistencies in product manufacturing, as operators might not have clear or complete instructions on how to execute tasks according to industry standards. For example, if a QMS software fails to provide comprehensive details on the calibration of equipment, operators might use improperly calibrated machines, resulting in products that deviate from quality specifications.

Moreover, incomplete documentation hampers a company's ability to demonstrate compliance with regulatory standards during audits. <u>Auditors rely heavily on thorough documentation to trace the production</u> <u>process from start to finish</u>, ensuring that all quality control measures are in place and effectively implemented. If the documentation does not accurately reflect the processes or fails to include all necessary records, it raises red flags for auditors, potentially leading to failed audits. This can result in legal and financial consequences, such as fines, recalls, or loss of certification, which can severely affect the company's reputation and marketability.



In comparison, a <u>comprehensive document management</u> system will also solve the accountability and document security conundrum which is: "Who had access to these critical files? Who changed our Operating Procedures? Who signed off on them?"

And finally, well-configured software can streamline and expedite audits, reduce the stress of audit preparation, and save countless hours annually.



Employee Accountability and Tracking

Incomplete records of who operated what equipment and when they did it can fail an audit.

Tracking and document employee accountability is important, particularly when operating equipment or requiring certification for such operations. This capability ensures that only qualified personnel handle specific tasks and machinery, which is critical for maintaining operational safety and product quality. Documenting these details supports compliance with industry regulations and standards, and it enhances overall process integrity by ensuring that all actions are traceable.

For a heat treater, tracking and documenting employee accountability when operating equipment or requiring certification is crucial for several reasons:

• **Safety and Compliance:** Heat treating involves high temperatures and potentially hazardous materials. Ensuring that only certified employees operate such equipment is essential for maintaining safety standards and complying with occupational health and safety regulations.

• **Quality Control:** The quality of heat-treated products depends heavily on precise temperature management and timing. Documenting who performed specific tasks helps in tracing any issues in the final product back to their source, facilitating quick corrective actions.

• **Training and Certification Tracking:** In heat treating, specific certifications may be required to handle certain materials or equipment. A robust QMS ensures that all operators are up-to-date with their certifications and have the necessary skills, which is vital for both regulatory compliance and maintaining high standards of product quality.

• Audit Readiness: Detailed records of who operated what equipment and when they did it are invaluable during audits. This documentation demonstrates that the company adheres to required standards and practices, helping to pass audits more smoothly.

• **ITAR/EAR Viewer Restriction Tracking:** Internal corporate policy on user viewing restrictions ensuring that only authorized users handle critical defense-related technologies and information.



More About ITAR/EAR Viewing Restrictions

Companies or manufacturers that are involved in the production, design, and distribution of military and defense-related equipment and services or deal with dual-use technologies, which are goods, software, and technology used for both civilian and military applications, have stringent management requirements of the various user viewing restrictions and regulations. Aerospace, defense contracting, and high-technology sectors are common examples where adherence to ITAR/EAR is crucial due to the sensitive nature of their products and technologies.

It is the responsibility of the manufacturer to ensure their supply chain is appropriately certified and compliant with ITAR/EAR Regulations. Non-compliance could result in substantial penalties, both civil and criminal so choosing a sophisticated QMS is essential for adhering to this regulatory framework.

ITAR (International Traffic in Arms Regulations) and EAR (Export Administration

Regulations) are U.S. regulatory frameworks designed to control the export and import

of defense-related articles and services on the United States Munitions List (USML) and dual-use technologies on the Commerce Control List (CCL), respectively. ITAR is administered by the U.S. Department of State's Directorate of Defense Trade Controls, while EAR is governed by the U.S. Department of Commerce's Bureau



of Industry and Security. These regulations ensure that sensitive technologies and information do not fall into the hands of entities that may pose a threat to national security.

The Human Factor (Clarifying Employee Accountability)

Taking shortcuts highlights the critical need for accountability.

Since individual people are involved in completing every part of a job properly, their desire to speed up processing and cut as many corners as possible to meet their assigned production quotas SCREAMS for continuous accountability. Without it, quality will suffer dramatically, rework and production costs will increase, unhappy customers and fewer orders will follow, and profits will plunge; and your ultimate business goal will not come to fruition.

These shortcuts may:

- Claim to have completed a task that was actually left undone.
- Attempt to skip a crucial step in the operational process.
- Falsely sign off on a process, asserting it was checked and verified when it was not.



- assert that a part was meticulously inspected for defects, when in reality, the inspection was superficial.
- allow unqualified operators using equipment

The QMS should gather all required information electronically, ensuring clarity on how each job step was processed, completed and done by whom. This includes obtaining the appropriate sign-offs and generating automatic compliance assurance documentation as the job progresses through the production floor toward completion.

Some software solutions boast of saving time by automatically tracking multiple job steps simultaneously. However, this can lead to quality management failures due to a lack of accountability for those processing steps. If individual job steps weren't important, why were they included in the original process?



Automatic job-step tracking assumes:

Every step is completed correctly without verification and no deviations occur that could compromise quality.

This approach compromises quality management by neglecting critical checkpoints:

• The same individual carried out the omitted job steps.

• It is assumed that the workforce and production operators adhered flawlessly to both customer and internal specifications.

- The person conducting the work had the necessary qualifications for that specific job step or to operate that equipment.
- The equipment used was appropriate and qualified for the task.
- All test results and quality inspections fell within acceptable limits.
- There were no nonconformities linked to the job steps that were aut omatically advanced.

• The equipment and personnel operated without any issues that could impact the quality or outcome of the job.

- No parts were damaged during the production step.
- The bypassed step fully complied with job requirements.
- There was no need for CAPA because it was assumed that all necessary corrective and preventive actions were effectively implemented and checked.
- The time taken for each job step was deemed unnecessary information.



Poorly Defined Processes

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Insufficient process documentation often results in nonconformities and adverse audit outcomes.

Poorly defined processes are a significant source of nonconformities and negative audit findings, primarily because they lead to inconsistent production outcomes and inadequate evidence of compliance. When processes are not clearly outlined, workers may not have a uniform understanding of the necessary steps or quality standards required, which can result in products that do not meet specifications or customer expectations. For instance, if a metal fabrication company lacks precise guidelines for the welding process, variations in welding techniques among workers could lead to structural weaknesses in the finished products. This inconsistency often becomes apparent during quality audits when there is no clear documentation or evidence to show that all products are manufactured to the same standard.

Furthermore, poorly defined processes complicate the collection and presentation of evidence during audits. Auditors require clear and concrete proof that each step of the process adheres to predefined standards and regulations. Without detailed process definitions, it becomes challenging to demonstrate that operations were conducted correctly.

In most manufacturing, if the process is not meticulously defined and followed, it could not only lead to safety risks but also result in audit failures when the auditor cannot find sufficient evidence that each component was completed correctly. This lack of detailed process definitions can lead to significant repercussions, such as the need for costly rework, recalls, or penalties for non-compliance. Additionally, it can damage a manufacturer's reputation and lead to a loss of trust among clients and regulatory bodies, ultimately impacting the company's ability to secure future business.

Poor Integration with ERP System

Technical and operational challenges are causing an incompatible interface with the existing ERP system.

Limited software system integration, particularly when a simplistic QMS fails to effectively connect with an Enterprise Resource Planning (ERP) system, results in significant communication barriers across production floor departments. This issue can arise due to several technical reasons:

• Incompatible Data Formats: One of the primary technical challenges is that different systems often use incompatible data formats. A simplistic QMS might not be designed to handle the complex data structures or formats used by <u>modern ERP systems</u>. This incompatibility prevents the seamless flow of data, as information cannot be directly transferred or may require manual conversion, which is time-consuming and error-prone.

• Lack of API Integration: Modern ERP systems are typically equipped with Application Programming Interfaces (APIs) that allow for integration with other software tools. If a QMS lacks the capability to integrate via APIs, it cannot connect effectively with the ERP system. Simplistic QMS solutions may not have the necessary API support or may have outdated APIs that do not match the modern, more secure, and robust APIs of current ERP systems.





Nonconformities

• **Outdated Technology Stack:** QMS solutions may be built on older technology stacks that do not support the latest integration protocols and security measures. This outdated technology can limit the system's ability to interface with newer ERP systems that use advanced technologies for data exchange and security.

• Limited Customization and Scalability: Limited customization options make it difficult to tailor the QMS to meet the specific integration needs of an ERP system and the growing data requirements of an organization, leading to performance bottlenecks especially when trying to process and share large volumes of floor data across departments.

• **Poor Security Measures:** Effective integration also requires robust security protocols to protect the data being exchanged between systems. QMS solutions may lack advanced security features like encryption, secure data transfer protocols, and authentication mechanisms, increasing the risk of data breaches during the integration process.

Lack of Continuous Development

<u>An outdated QMS</u> will struggle to integrate smoothly with other systems, leading to inefficiencies and increased risk of errors and cybersecurity issues.



In the fast-evolving business landscape, continuous innovation in technology is critical, particularly for QMS's that play a central role in maintaining operational excellence. A software partner that consistently innovates ensures that your QMS adapts to changing regulatory requirements, technological advancements, and increased <u>cybersecurity concerns</u>. This proactive approach to software development helps prevent the system from becoming obsolete, thereby safeguarding your organization and your customers information.

Key vulnerabilities and heightened susceptibility to cybersecurity threats:

• Lack of Updates and Patches: Older software systems often reach the end of their support lifecycle, which means they no longer receive regular updates or security patches from the developer. This leaves known vulnerabilities unpatched, making it easier for cybercriminals to exploit these weaknesses. For example, vulnerabilities like the infamous WannaCry ransomware attack predominantly targeted systems running outdated versions of Windows that were no longer supported.

• Incompatibility with Modern Security Tools: As cybersecurity technologies advance, they often become incompatible with older software systems. This can prevent the implementation of the latest security measures, such as advanced encryption, intrusion detection systems, and comprehensive endpoint protection solutions that are designed to work with more current software architectures.





• Increased System Downtime and Reliability Issues: Older software systems tend to be less stable and more prone to crashes and other system failures. This can lead to increased system downtime, during which the network and its data may be more vulnerable to attacks. Moreover, during downtime, normal security processes like real-time monitoring and logging may be interrupted, further increasing vulnerability.

• **Compliance Risks:** Many industries are governed by strict regulatory standards that mandate the protection of data through up-to-date security practices. Older QMS platforms may not comply with current regulations which can not only lead to legal and financial penalties but also open up security vulnerabilities that are specifically addressed in newer regulatory updates.

• **Poor Integration with Newer Technologies:** Older systems often struggle to integrate securely with newer technologies, which can create additional security gaps. For instance, if a new application requires certain security protocols that the old system does not support, it may require workarounds or less secure methods of integration that expose both systems to potential breaches.

Inadequate Labor Tracking

Unable to directly and in indirectly track labor during each job step for accurate costing.

Tracking is crucial for several reasons, primarily for ensuring accurate product costing and improving operational efficiency. A sophisticated QMS can integrate time-tracking systems that record the exact time employees spend on each job step. This can be done through digital timecards, automated log-ins at workstations, or scanning systems that track employee presence and activity around specific job stations. By tagging these time logs with specific processes or tasks, the QMS can accumulate precise data on the labor input required for each segment of production. Indirect labor tracking is accomplished by analyzing workflow and process bottlenecks.

For instance, if a particular phase consistently takes longer than expected, the system can flag this anomaly. This triggers a review, which may reveal inefficiencies or training gaps affecting labor use. Addressing these issues not only streamlines operations but also ensures that labor resources are utilized effectively, contributing to more accurate cost assessments. Tracking labor directly and indirectly via a QMS is vital for several reasons:

• **Costing Accuracy:** Labor costs often constitute a significant portion of the total production costs. Accurate tracking ensures that these costs are correctly allocated to products, which is crucial for setting prices that reflect the true cost of production. This accuracy is critical for maintaining profitability and competitive pricing.

• **Operational Efficiency:** Detailed insights into where and how labor is used help identify inefficiencies and training needs. For example, if certain tasks take longer than they should, it may indicate that processes could be optimized or that additional training is necessary. Addressing these issues can lead to faster production times and lower labor costs per unit.

• Financial Planning and Analysis: Reliable labor data helps in forecasting and budgeting. Under-



standing the labor inputs required for different tasks allows businesses to plan better for future projects, estimate costs more accurately, and allocate resources more effectively.

• **Regulatory Compliance and Reporting:** In many industries, especially those with unionized workforces or stringent labor regulations, accurate recording of labor hours is essential for compliance to ensure all regulatory requirements are met, avoiding legal complications and potential fines.

• **Quality Control:** By linking labor tracking to specific parts of the production process, a QMS can help in tracing quality issues to their roots. If a particular batch of products has defects, labor tracking can help determine whether workmanship issues played a role, leading to targeted quality improvements.

Here's a specific example illustrating how labor tracking can pinpoint workmanship issues that may lead to defects, enabling targeted quality improvements.

Consider a scenario in a metal finishing facility that specializes in electroplating components for automotive applications. Each batch of parts undergoes several critical steps including cleaning, coating, and

post-treatment inspection. Suppose a batch of components exhibits inconsistencies in the thickness of the plating, which can lead to premature wear or failure in their application.

Using a robust QMS with integrated labor tracking, the facility can trace back through the production records for that specific batch. The system logs which employees were responsible for each step of the process and how much time they spent on specific tasks. Upon reviewing the data, it might be noticed that the cleaning step—critical for ensuring that the coating adheres properly—was consistently taking less time than the established standard.



Further investigation could reveal that the employee responsible for this step was not following the standard operating procedures (SOPs), possibly due to inadequate training or misunderstanding of the process requirements. The labor tracking data, therefore, not only identifies the potential source of the defect but also pinpoints a specific area where retraining or process reinforcement is needed.

As a result, the facility can address this issue by:

- Providing targeted retraining for the employee to ensure they understand and can execute the cleaning process correctly.
- Adjusting the QMS to provide more detailed prompts or checks at critical stages of the production process, ensuring compliance with SOPs.

• Implementing more rigorous supervisory checks or peer reviews for critical process steps to ensure all employees adhere to quality standards.



This targeted intervention helps improve the overall quality of the output by ensuring that all steps in the metal finishing process are performed correctly, thereby reducing the likelihood of defects. It also underscores the importance of every individual's role in the production chain and enhances the accountability mechanisms within the facility.

As we navigate through the intricate challenges and high stakes associated with Quality Management Systems, it becomes increasingly clear that settling for simplistic solutions can severely undercut your operational success and compliance posture. The allure of quick fixes and reduced operational times, while tempting, often paves the way for significant drawbacks—increased costs, production delays, audit nightmares, and, critically, reputational damage.

How Does One Circumvent These Pitfalls Effectively?

Enter the realm of **Bluestreak I Bright AM™**, the epitome of what modern, sophisticated, and integrated QMS should embody. Unlike simplistic systems that falter under the weight of modern manufacturing demands, **Bluestreak I Bright AM™** thrives, offering robust solutions that address and streamline every nuance of quality management and production oversight.



Consider the depth and breadth of functionality that Bluestreak I Bright AM[™] brings to the table capabilities that enable real-time management of key product decisions, rigorous adherence to quality standards, and flawless integration with ERP systems to ensure data flows seamlessly across your production floor. This system doesn't just manage; it excels, ensuring that each operation step, no matter how minute, is accounted for and aligns with your stringent quality and compliance requirements. So, as you evaluate your current QMS, ask yourself: Is it too simplistic to handle our production requirements effectively? Are we constantly battling the limitations of our system, thus hindering our operational efficiency and compliance?

If your QMS is not solving your production issues, it's time to consider a strategic shift. It's time to think about not just meeting the minimum standards but exceeding them with a system designed to tackle the complexities of modern manufacturing head-on.

Prioritizing Correctness Over Simplicity "I'm not telling you it's going to be easy. I am telling you it's going to be worth it." ~ Art Williams



Below is an eye-opening Case Study showing the extensive process that a global powerhouse company went through as they were selecting their much-needed MES and QMS software system.

Case Study

Case Study - GE Aerospace



GE Aviation, ATC & Bluestreak[™] - Why did ATC look for a better MES system?

The ATC (Additive Technology Center), located just outside Cincinnati, Ohio, was established at GE Aviation after acquiring Morris Technologies, one of the early leaders in Additive Manufacturing. Now, ATC, is one of world's leaders in Additive Manufacturing of Aviation, Commercial, Marine and land-based jet engine parts and components.

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- ATC used E2 Shoptech for half of the office/shop and Infor Visual for the other half.
- Neither of the systems fit the needs of ATC and the Additive Manufacturing format.
- Neither software was customizable.
- Both had limited users. Purchased seats of software. Users struggled to get access.
- Everything was on paper. Very limited data. Changes were made on paper but not in the systems making datamining and traceability impossible.
- Used many Excel spreadsheets, Access and Project schedules. Limited access to all.
- Nonconformances were tracked on paper, not electronically. No control.

• WIP (work in process) tracking was very manual by searching spreadsheets and walking the shop floor.

- Struggled with finding information during audits.

• Technicians having to search the network for information and documents in order to perform their tasks.



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Case Studty

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Because of the issues and challenges, ATC began the search for a new MES system. The options that the new system needed were:

- Customizable software to fit ATC's needs.
- Integrated WIP Tracking and full visibility of all Work Orders (WO).
- User-friendly, easy to learn and use.
- Document storage linked to WOs.
- Quality and Nonconformance control.
- Integrated Serial Numbers.

After evaluating multiple MES systems, Bluestreak[™] was the clear choice. They fit all of ATC's needs. ATC went live with the Bluestreak QMS + MES[™] platform after only a few months of setup, configuration and staff training. The Bluestreak[™] and ATC teams worked together to customize the software to perfectly fit all of ATC's Additive Manufacturing needs. Today, there are over 6000 active Work Orders on the floor and over 120 users.

Some of the clear benefits of Bluestreak[™] are:

• Unlimited users at no additional cost.

• User controls. Able to assign Roles to limit user's access and permissions. Only qualified employees can perform certain tasks.

- Complete and accurate WIP Tracking.
- Real-time WO status and reporting.

• Full genealogy of and searchable by Serial Numbers, WOs, Customers, Technician data input, Production Pathway™ operational transactions, Quality Characteristics and Data questions, Material Lot numbers, Build Plate linkages, etc.



- Auto-generated Serial Numbers for all build plates and every part on the build.
- Able to use Specifications to limit Equipment choices. Only qualified Equipment can be chosen by Technicians. Can also qualify employees and vendors for certain job steps.

Case Study

- <u>BlueDocs</u>[™] and revision-controlled document storage, approvals and publishing.
- Migrated all Quality system documents to BlueDocs™.

• All information for Technicians to perform tasks are in front of them, including access to all documents, work instructions.

- Fully integrated Nonconformances documented by WO number and by Serial Number.
- Virtually paperless. All information is stored electronically and fully trackable.

• Auditors are always very impressed with Bluestreak[™] and the ability to pull up any information for all job scenarios.

Bluestreak's[™] nonconformance tracking has virtually eliminated all quality escapes.

• Bluestreak's[™] support team is amazing. They are always able to help at a moments notice. They are very easy to work with and open to suggestions or improvement ideas.

Prior to Bluestreak[™], ATC struggled to manage and track WOs throughout the shop. Bluestreak[™] has made this effortless. Any customer, at any time, can ask for status on their parts and they will get an accurate update instantly. Reporting and WIP tracking make it easy to manage the over 6000 active WOs at any time. Capacity planning has been made easy with Bluestreak[™]. Bluestreak[™] was and continues to be the clear winner for GE ATC's Additive Manufacturing needs.

-end of Case Study-



Conclusion

Conclusion

If you are using the right software in the right way, the savings alone will pay for the software, and improve your profits, month after month, in perpetuity. Along with your trained workforce, your software really NEEDS to be one of your most important business ASSETS going forward. Without the right software, your workforce will struggle.

The preferred software should also be browser-based that allows your workforce and management team to access real-time data from anywhere, any time, and on any device (obviously with proper multi-factor authentication), so they can better manage their business responsibilities whether in or out of the office.

Choose Bluestreak I Bright AM[™] and experience the transformation from superficial quality management to comprehensive excellence in every production step. Remember, when quality and compliance are on the line, settling for less is not an option.

Are you ready to upgrade to a system that rises to the challenge?

Feel free to contact me if you have any questions or if you want to discuss your operations and how to make the necessary improvements. email: <u>ron.beltz@go-throughput.com</u> • Call: 262.955.5662

