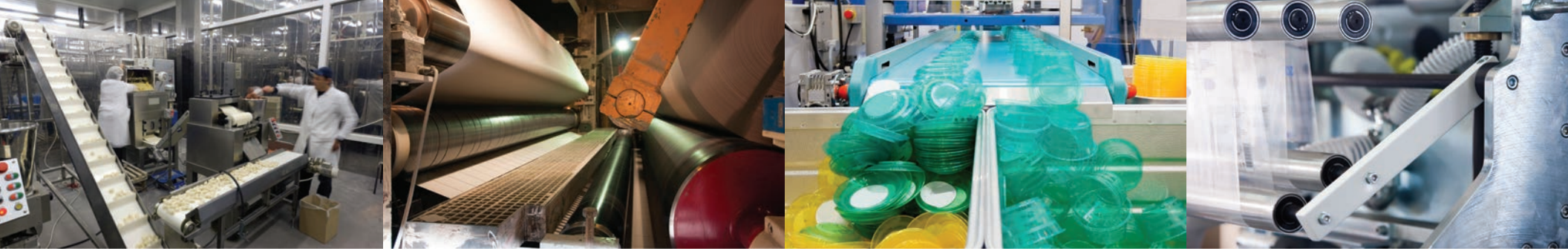


QISOFT

MANUFACTURING INTELLIGENCE
SOFTWARE





BETTER? FASTER? CHEAPER?

The world of manufacturing can be tough. It doesn't matter what your business is, every day the way you work is challenged, by customers, competition and suppliers alike.

In today's highly competitive market, most manufacturing plants are under intense pressure to produce high quality product and deliver exceptional service, all at lower costs and without sacrificing customer value. Whether you sell to other businesses, consumers or both, it is clear in today's economic environment that there is a consistent push for you to deliver **BETTER, FASTER, CHEAPER**.

So what does this really mean for you as a manufacturing operation?

BETTER - improved quality or best fit for purpose
FASTER - optimization of your production process
CHEAPER - lower overall cost of production

Interested to know how you can achieve all this?

We are QiSOFT and for more than 25 years our manufacturing intelligence suite - **QIS** - has been helping organizations harness the power of information throughout their manufacturing chain to achieve sustainable competitive advantage.

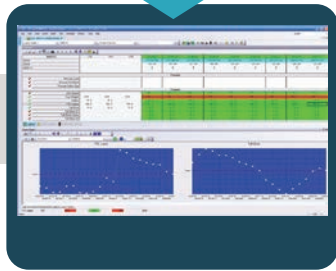
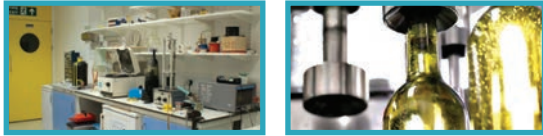
We understand the daily challenges faced to cater for the variation in raw materials, to understand and minimize variation in internal processes and ensure there is consistency in finished product while maintaining maximum process efficiency. Solving these challenges leads to less waste, less rework, less downtime, happier customers and, most importantly, lower costs and higher margins.

QIS can help you address every one of these challenges, from suppliers through internal operations and on to the customer, turning data at every step into information and actionable knowledge to facilitate decision making at all levels.

Knowing which materials work best, when process adjustments are optimal, having clear evidence of non-conformance and the most common causes of production inefficiencies - all contribute to reduction and even elimination of the preventable costs associated with process operations.

BETTER – FASTER – CHEAPER is no longer just a phrase, it's a promise.

How you manage the real-time use of your machinery, people, materials and time might just be your competitive advantage.



Visibility



Understanding



Improvement

The more data we understand, the more answers we find...

There is a growing need for tools that enable not just management but operators alike to collect, connect, analyze and act on large amounts of real-time operations data. Achieving efficient manufacture, the intended output and the right quality depends on a stable and effective process operating correctly. This requires working to plan in the full knowledge of what is happening throughout the process.

The key to success is to identify and focus on the 'right things' that provide differentiated value to your customers and ensure you have the ability to deliver continuous improvement over the long term. Achieving this requires a fact-based understanding of operational performance.

Data in a database has absolutely no value to your business. Value is provided through tools that make the data **visible**, readily **understood** & then delivered to where it can **support decision making** - improving product quality, reducing losses and costs, improving production flexibility and product consistency - all leading to **greater customer satisfaction and higher profits**.

QIS can enable you and your team to keep a "finger on the pulse," tracking the health of each stage of the process, when and where it is most critical!

Instead of just collecting the data you can fully utilize it in order to...

- + Detect, track and stop substandard raw materials entering your process
- + Identify, analyze and address process and product variation as it happens
- + Analyze quality, capability and performance in real-time
- + Review timely reports of documented evidence that can be easily understood by managers, supervisors, operators, engineers and technologists
- + Confidently make critical decisions based on fact and not guesswork
- + Achieve stable and effective process operations

You could say QIS gives data a whole new meaning:

**DISCOVERING
ALL
THE
ANSWERS**

Stable supplier relationships yield stable end products...

It is unquestionable that the output and quality of your product is important to your customers and to the success of your business. However, to get the right results, you need to exert control at each and every stage of the manufacturing process. And this is especially true at the beginning - if you start with flawed materials, the end result may fall far short of what your customers demand.

The dependability of supplies, critical to all manufacturing operations, cannot be left to chance nor to dealing with the problems after they arise. The best assurance of supplies is an able supplier consistently working to agreed upon standards.

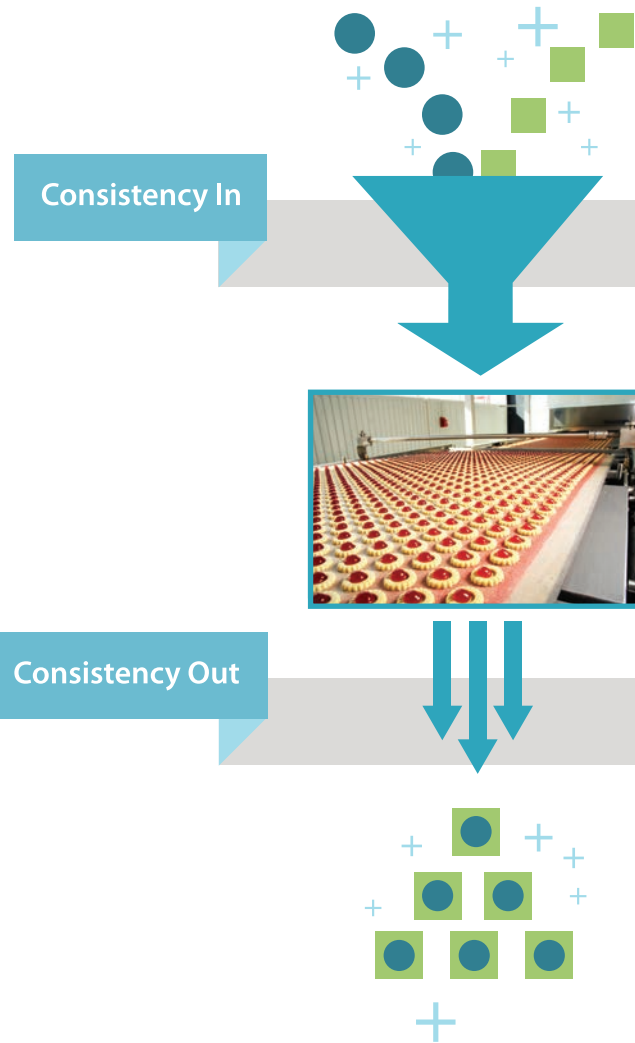
The raw materials of your process are the finished products of a previous manufacturing process; as such they will vary in their attributes and behavior. There will be 'good' raw materials and 'not so good' raw materials.

Trying to isolate faults, detect defects already in use or remedy failures are all poor substitutes for proper management of supplies from the onset. Conversely, when you are able to track, capture and store supplier data, interpret the evidence and also make it visible, then you can ensure consistency in raw materials, your process and its resulting products and detect potential issues before they affect your production.

The supplier module in QIS enables you to:

- + Formalize recording of all materials, suppliers and approvals
- + Compare quality data (whether from Certificates of Analysis or sample testing) of all received materials to ensure standards are met
- + Perform immediate analysis upon delivery to compare real-time results against supply history
- + Interpret all findings and make them visible and easily understood
- + Support vital decisions in order to confidently release the materials into production
- + Alert you to any material variances in order to prevent negative impact to your process or production schedule, which eliminates waste for a more agile and profitable process

Giving the best to your customers requires GETTING the best from your suppliers. Leveraging the power of QIS can ensure you receive nothing less.



Raw Materials Engineer

"Utilizing the supplier module in QIS allowed us to quickly detect a significant drift in the Certificate of Analysis data of a key property across multiple deliveries, from one particular vendor. This meant we were able to report it to them before it became an issue that could have significantly affected future production. Even though the vendor had all the relevant data, they did not have a quality system like QIS in place to bring this to their attention."



Let Documentation Be Your Guide

Once you are confident in the grade of your materials, you need to ensure what you intended to make is actually being made.

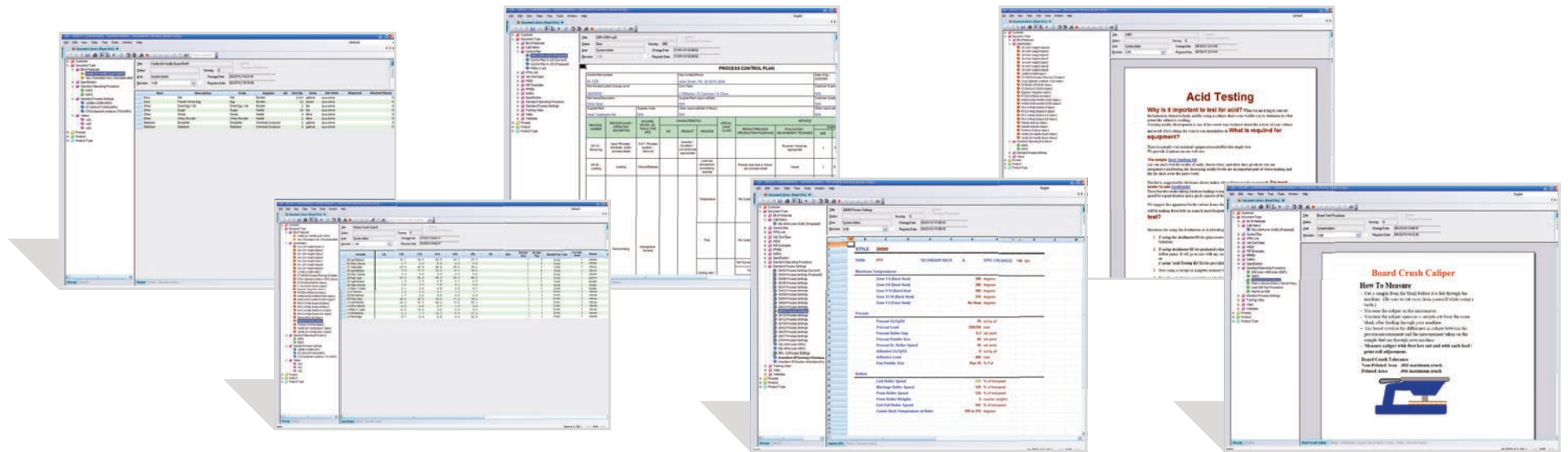
Documentation is essential in order to track product success and failure and ultimately set ideal standards by which all future production will be measured. Making sure all current documentation can be swiftly and easily accessed by the people running the process guarantees that they have the right information at their fingertips when making product and operational decisions in real-time.

Among its many capabilities, QIS provides one-click access to your documentation, making it highly visible and available to production exactly when they need it. Operators only ever see the most up to date revision, so they know it is always the correct one. This helps ensure specifications are followed, recipes are managed and product consistency is achieved.

With the ability to continually collect real-time data and compare it with your original documentation, you can truly assess the performance and outcome of your process. This allows you to benefit from learning's and implement changes as required, for genuine and measurable continuous improvement.

QIS manages all forms of reference documentation related to operations including (but not limited to):

- + Bill of Materials/ Recipes
 - + Standard Operating Settings and Procedures
 - + Manufacturing and Finished Product Specifications
 - + Cause and Effect Matrix, FMEA and Control Plans
 - + Health and Safety Procedures
 - + Standard Test Methods
 - + Customer Order Instructions
-
- + Ensures you always access the most up-to-date documentation with its full revision and comprehensive archive management capabilities
 - + Allows for editing, grouping and sharing documents to quickly build a reference library that is easily maintained



LEAF HOLLAND:

Keeping it Sweet!

"The analysis features within QIS have helped identify many causes for product quality deviations. Warped peppermint tablets (caused by over liquefied dough) occurred especially when a lot of sugar was being used from the sugar mills. Once this was identified, the root cause of the problem became clear quite soon: the grinded sugar became too warm when the demand for sugar was high. The solution was simple: cooling the sugar mills."

Taking Control

Process Control is very much a matter of doing the same things repeatedly but that is not always easy. There are inevitable pressures to take risks. In the face of schedule demands, economic needs and imposed changes you often have to respond rapidly, greatly increasing the vulnerability to errors.

Variation is inherent within all manufacturing, affecting all the inputs and giving rise to variation in the outputs. But process changes are too often made without correct monitoring of the effects and with inadequate protection. We need to be armed with process knowledge to be able to preempt adverse results.

QIS gives you the ability to take raw process data and translate it into evidence for control action. So essentially you can address a potentially costly problem before it ever becomes one, and most importantly, before your customers find it...

- + Acquire process data in real-time, presented in a clear, concise format easily understood throughout your enterprise
- + Detect unwanted changes and make early adjustments
- + Anticipate and prevent critical changes before output is affected
- + Prevent unnecessary downtime with advanced incident tracking and asset monitoring (OEE)
- + Reduce variation and improve product consistency and quality - **BETTER**
- + Achieve greater productivity with less waste - **FASTER**
- + Reduces waste, lowers cost and improves your bottom line - **CHEAPER**

With QIS the days of waiting for the daily meeting and then frantically shuffling through paperwork to find out about recent performance are over. The data is available in real-time throughout the organization and presented in a clear and concise format.

Improving Your Manufacturing IQ

Defining, measuring and controlling key process data is critical; if your process is not predictable your customers are at risk – as is your bottom line.

Investment of effort in control of the process affects the product and output yet to come. Attention to the causes of quality reduces the risk of errors, limiting the need for inspection and selection. But for dependable output of the right quality, we need to operate a stable and consistent process.

Having immediate access to key information across your operation can help you to determine what your process can do – in real-time! Armed with this critical information you can make the right changes to your process, at the right time.

QIS is founded on the principals of SPC in order to help you monitor and control your process so that it operates at its full potential. It allows you to collect and analyze both real-time and historic data, presenting this for immediate investigation through simple and easy to understand charts and reports.

- + Examine your process and its sources of variation with easy to access control charts
- + Utilize tools that give weight to objective analysis over subjective opinions, including capability studies, run summaries and variation analysis
- + Ensure your process behaves predictably to produce as much conforming product as possible with the least possible waste
- + Quickly assess when to take action, and more importantly, when not to take action - understanding when to leave the process alone is as important as knowing when changes are needed

And the best thing? Not everyone needs to be a statistics expert to truly realize the benefits of SPC - QIS does all the powerful stats in the background so you don't have to. So with the advanced yet easy-to-use analytics of QIS you will have the tools to examine your process and any sources of variation within that process using objective analysis – or facts – for confident decision making. Allowing you to detect, analyze, prevent and address potential quality and process issues before they become a costly problem.

The result is a **BETTER – FASTER – CHEAPER** process and increased customer satisfaction.

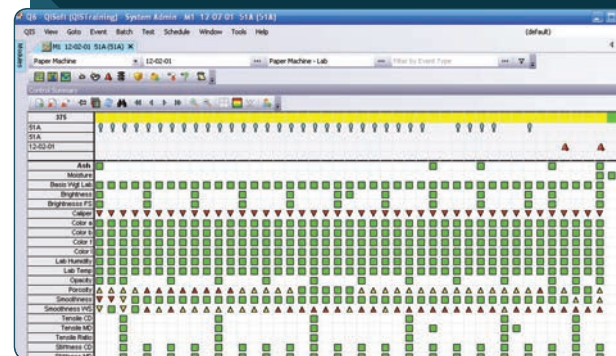


Sample QIS Screenshots



The QIS Logsheets provides a real time 'single window' view of the plant operations, including product test results, process readings, SPC alarms and operator text comments. Data is compared to current specification and a clear 'traffic light' color coding immediately highlights control and acceptance status.

The wide variety of control and cross-machine profile charts available helps operators distinguish between random fluctuations and true shifts within the process and take appropriate & timely action when needed.



The control summary provides an instant visual indicator of the state of process control over a period. Utilizing the same simple and easy-to-understand traffic light color coding used on the log-sheet.

Make the Connection

Process industries are by necessity more highly automated than discrete manufacturing. As such, complexity and systems disparity is common.

Yet, in today's manufacturing environment, a strong IT infrastructure can provide a non-capital intensive approach to increasing production and improving quality, reducing costs and environmental impacts, and improving customer service. The key to success is in providing interoperability between existing business and manufacturing systems thereby facilitating the analysis of real-time information, performance monitoring and allowing the identification of problems before they become a crisis.

It is fairly well accepted that a good ERP system is essential for a business to streamline its supply chain and understand transactional data. However what is also becoming clear is that to get the most value out of ERP systems it is vital to also have closely coupled connectivity to a software system that is especially designed to help understand productivity, efficiency and quality problems on the shop floor.

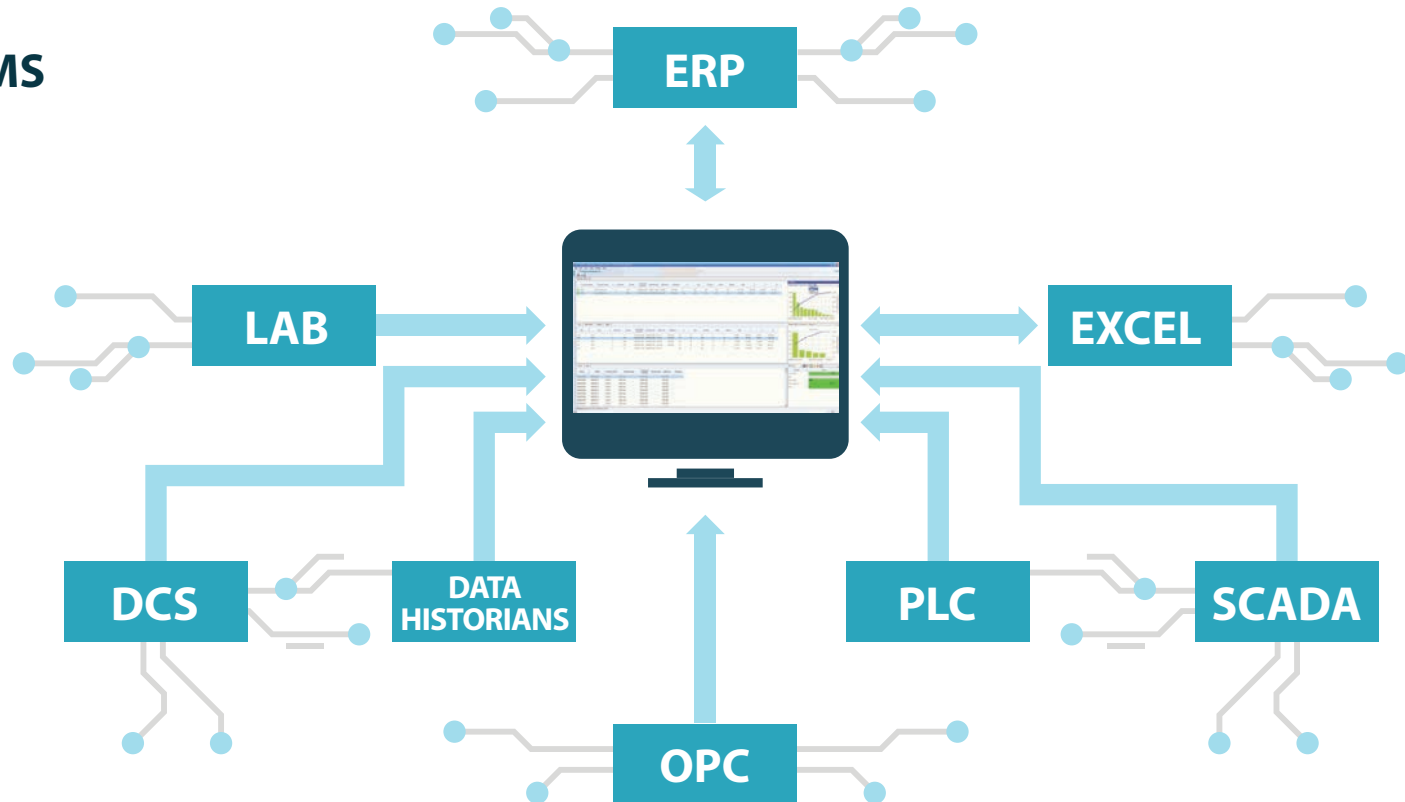
QIS helps connect the many data islands within your enterprise, taking real-time data generated on the shop floor all the way to the top floor and everywhere in between. This ensures data from across your manufacturing chain is not only collected from all these disparate sources but is transformed into actionable intelligence, in the right place at the right time. By using intelligent analytics to reduce complexity and simplify decision-making, QIS enables seamless enterprise-wide, real-time visibility of information – at the same time reducing or eliminating reliance on traditional manual data process analysis.

Scattered log-sheets or quality data sheets, trial-and-error solutions and isolated software systems are as outdated as they are ineffective. When there is a gap in connectivity within your organization each individual part in the greater whole is adversely affected, slowing productivity and draining profits.

Close those gaps, and you open the door to achieving **BETTER – FASTER – CHEAPER** operations in every way, so you can truly deliver operational excellence and achieve a sustainable competitive advantage.

BUSINESS SYSTEMS

SHOP FLOOR



CASE STUDY

A Quest for Cost Savings & Improved Quality

D.S. Smith Paper

D.S. Smith Paper is the largest manufacturer and recycler of paper in the UK and is part of the larger D.S. Smith group, an international supplier of recycled packaging and Europe's leading office products wholesaler.

Before the installation of QIS, plant control was exercised by a combination of automated and manual data collection, followed by manual collation and analysis that was time consuming and retrospective. Therefore to make sure that product was within specification there was a tendency to produce over weight material incurring higher fibre, chemical and energy costs. It was soon identified that a tighter control loop was needed in their quest for higher quality, productivity and lower costs.

Once installed, the new QIS system provided the mill with real-time data from the manufacturing processes and timely feedback of key parameters. Quality information variables are now monitored across the mill and ProcessLink and LabLink connections facilitate the collection of data both manually and automatically via links to 3rd party business and process systems. In addition, off-line analysis from the lab is presented to the mills so that operators and local managers have the full picture of quality and production performance.

In the first 8 months of operation, QIS brought savings of over £100,000 in fibre and chemical costs. Over and above these initial savings, reel-by-reel data enables non-conforming material to be precisely pinpointed, resulting in lower waste and downgrade levels. Higher productivity is also achieved from faster machine speeds made possible by closer control of wet end conditions. Automated process monitoring gives greater accuracy and reliability of data over manual methods and allows for built-in compensation where the system detects variability in measurement.

The quest for higher quality and lower costs is a continuous process and QiSOFT continues to support this with on-going development and software upgrades.

Information Application

Short-term conformance is one thing but your customers are more often concerned with longer-term performance and, in today's climate, meeting specification is often no longer enough. To maintain a competitive advantage, close adherence to target with minimal variation is a necessity. Demonstrating and displaying consistent performance can become a powerful and vital sales aid.

The cycle of continuous improvement begins with documentation; the baseline of information that drives all steps in your process. Many systems provide for comprehensive data capture but then lack the ability to help you truly understand that data, transforming it into valuable information to feed back into that documentation for ongoing improvement.

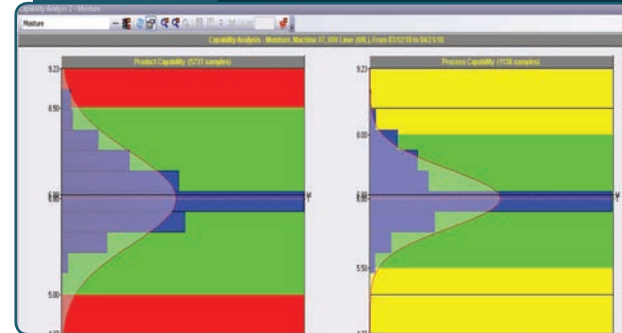
QIS allows you to easily and quickly...

- + Release valuable information and provide essential, comprehensive process understanding
- + Clearly distinguish between normal and exceptional running with process control charts
- + Crunch months and years of data in seconds and assess long-term consistency and capabilities with simple-to-use yet sophisticated statistical tools; including conformance summaries, process and product capability charts and much more.

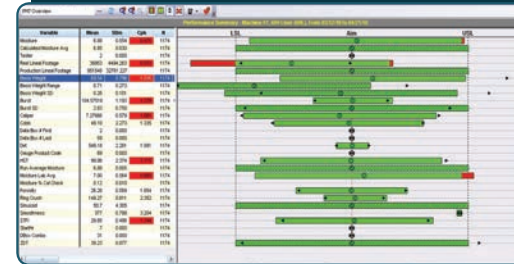
All the analysis tools in QIS are designed to be quick and simple to use, and readily accessible for review on-line, empowering operators and managers to make faster and more accurate decisions – when it matters! Collecting data just to fill a database will never yield a competitive advantage. However, when you leverage the answers uncovered in that data to fuel informed decisions, deliver preemptive responses and feed into continuous process improvement you will start to reap the rewards.

The benefits that can be gained are wide ranging and, with its ease of use and access, QIS can be leveraged for everyday decision support for Production, Quality, Environmental and Customer Management. Getting **BETTER** information, on the line **FASTER**, will ultimately help lower costs (**CHEAPER**) and optimize your process performance.

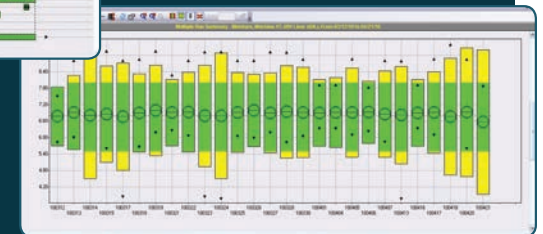
Touch-of-a-button analyses available in QIS include:



Capability overview of multiple variables, for comparison against existing Control and Specification settings. The extent of improvements that may be needed can be readily identified or, if capability is better than required, identify how manufacturing targets may be adjusted to reduce manufacturing costs.



Rapid review of capability to support improvement decisions. Establish effective control limits for the manufacturing process and drive confidence in the ability to meet customer requirements with minimal production losses.



Based on R&D tests, we defined draft specifications, but these needed to be reviewed and updated on a regular basis. QIS supplies us with the right information to optimize these specifications.

The End (Or is it?)...

We all know that the end product is not truly the end of the process. The cyclical nature of any manufacturing process is highly dependent upon identifying issues, recording actions taken, learning from those actions and applying necessary steps to prevent those problems recurring. As one shift ends and another begins, connecting what happened in this daily transfer is a crucial link to consistent performance.

Only when you are able to identify issues, record actions taken, learn from those actions and apply preventative measures will continuous process improvement begin. The data is there, the question is, are you leveraging it for your benefit?

In today's competitive environment, products that are 'close enough' to being right are anything but enough. What's more, getting it right 'most of the time' will also not yield the long-term success you require. Only when you get it right every time can you win and keep customers.

The simple-to-use yet sophisticated tools of our manufacturing intelligence suite enable you to achieve long-term consistency for exceptional results.

- + Data analysis acquired every step of the way fuels informed decisions
- + Real-time findings allow you to improve performance and reduce cost
- + Decisions and actions are stored to ensure your entire enterprise will learn from the past to perfect the future
- + Management of reference documentation, including, but not limited to, BOMs, specifications, standard operating procedures and standard process settings, ensures that crucial information is centralized and easily accessible
- + Equipping your entire enterprise – from shop floor to top floor – with all product and process-related information yields a collective approach to continuous improvement

Good use of QIS can help you truly understand your process and utilize that understanding to optimize operations.

A tightly run and highly efficient organization can undercut the competition and win market share, as well as deliver a streamlined operation; all things that directly benefit the bottom line.

"A happy customer that comes back for more is worth 10 prospects!"

W. Edwards Deming

Certification of Quality

A Certificate of Analysis assures your customer that the properties of the products you have supplied meet specification. Put another way, it is your assurance of the quality of your product. This makes accuracy of the content critical and, since it is a reflection of your company, its presentation important. It may also be the last opportunity you have for quality assurance before a shipment is made.

The CoA module in QIS provides a flexible and configurable system that not only caters for all of the demands of satisfying ever increasing customer needs, it also caters for reporting of data from anywhere in the product genealogy.

Report Preview

Preview

PRODUCT CERTIFICATION

Customer: R.J. Renner Tobacco Company
Tobaccoville HQ Center 1500
Tobaccoville NC 27050

Bill Of Matg # 1002348
Shipping Date 24-Nov-16
Customer Order # 883000009-17
Product 9912817
Shipped Items 109AB04108, 109AB04116, 109AB04128, 109AB04188

Property	Target	Mean	Min	Max	SDm
Back Weight	28.80	27.88	26.76	28.76	0.14
Brightness	93.32	93.00	93.40	93.40	0.18
Color	0.83	0.80	0.80	0.80	0.08
Concave	82.84	81.30	84.08	84.08	1.18
CARC3	27.70	27.00	28.00	28.00	0.48
Depth	87.88	87.32	88.28	88.28	0.47
Perish	2.88838	2.81700	2.88080	2.88080	0.0383



CASE STUDY

Achieving Accuracy Through Automation

Technical Fibre Products, Kendal

When you manufacture advanced materials - especially those used in demanding applications - there is no room for error. Such is the task of Technical Fibre Products (TFP). From automotive to aerospace needs and even fire engineering, TFP must ensure material quality, consistency, certified conformance and adherence to set specifications without fail.

Certifying conformance is complicated due to the huge range of source materials, blends, thicknesses and weights that are involved in manufacture. In addition, differing monitoring criteria are required by a varied set of end-users. These customers often demand exceptionally close conformity to specification and timely production of data to ensure the integrity of their own production.

Prior to QIS installation, TFP largely used manual processes for data gathering and interpretation. This procedure involved a substantial commitment of skilled manpower to a tedious and largely unrewarding task.

A structured and objective approach was essential in order to find a suitable solution that would not only work for TFP but also its site neighbour, James Cropper. With a clearly ranked statement of requirements, members of the IT department, quality assurance teams and operators were involved in the final software-selection decision and it was agreed that QIS not only met all current needs but also offered scope to keep pace with future developments.

The installation of the system brought TFP tangible benefits. Now, a comprehensive range of data is gathered around the plant and correlated with findings from laboratory tests. QIS has the capability to interface directly with the company's existing Measurex process control system through ProcessLink™, the suite's dedicated interface management module. As each reel is completed, critical product and process data downloads automatically to the software's data bank. Certificates of Conformance are now produced in half the time and with much greater accuracy.

With the installation of QIS, TFP has experienced the full benefits of automation including improved real-time process control data, rapid analysis and wide availability making it possible to respond promptly to changes and actively manipulate the process to achieve the desired quality and improve customer service.

BETTER!

FASTER!

CHEAPER!

What's the Bottom Line?

- + Detect, track and stop substandard raw materials entering your process
- + Prevent unnecessary raw material usage
- + Ensure operators are using the right specifications, procedures and set up every time
- + Identify, analyze and address process and product variation as it happens

Master Your Raw Materials

What goes into your process ultimately determines what comes out. QIS allows you to manage your supplier relationships so that you are sure the standards you require are always delivered. Better yet, you will be able to assess the impact of those materials on your process, which often reveals the cheapest option is costing you more than you think.

Stay On Track

Is what you intended to make actually being made? Too often, in the day-to-day operations of your organization, this crucial step is overlooked. That's why QIS has the capability to constantly compare your end product with your starting point. When you follow set standards you will be on track for a profitable future.

Be Preemptive

What if you could stop a problem before it even became one? You can, by empowering every member of your organization with real-time, accurate insight using the tools within QIS. The sooner you detect a problem the quicker you can correct it resulting in less waste, improved profits and higher quality products.

- + Analyze quality, capability and performance in real-time
- + Avoid unnecessary operator intervention and needless machine downtime
- + Access easy-to-use control charts, graphical trends and dashboard reports

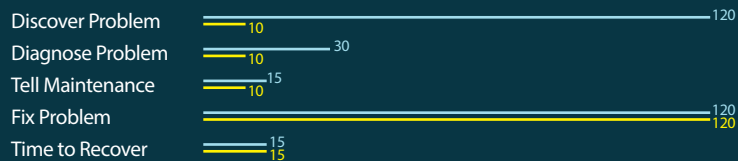
Bridge the Gap

The multiple machines within your plant and perhaps even multiple sites within your organization are like links in a chain. When they are connected and working together, your process is unbreakable. When even one link shows weakness or loses touch with the others, it's virtually impossible to move together toward a common goal (much less achieve product consistency). Among its many capabilities, QIS can connect your sites and systems to create a strong, unified organization that paves the way to process excellence.

Never Stop Improving

In process manufacturing, the end is really just the beginning. Once your final product is produced, that is when you must examine the end result to ensure your customers receive nothing less than the exacting standards they demand. With practice, comes perfection and QIS will equip your organization with the right tools to learn from the past in order to perfect what comes next.

Response with **Plant Wide QIS** and Without QIS (in minutes)



The QiSOFT Difference

"There's a user-friendly advantage of QIS that other systems just don't have. QIS has a familiarity that the plant workers really appreciate. It's been upgraded over the years and is technologically on point, yet it's still so easy to use that it's never intimidating to anyone."

From Shop Floor to Top Floor

- = Multi Discipline - from quality, production & technical to senior management and board
- = The right intelligence to the right person at the right time
- = Operator empowerment with process knowledge to support actions and predict performance
- = Availability of QIS to support sales & technical teams

Total Process Management

- = Holistic view of the whole process from raw material through to product delivery
- = Improved communication of product and process information throughout the mill
- = Benefits can be gained across the plant and are not just confined to one area

QiSOFT



Advanced & Complete Connectivity

- = easy to access single window for all your product and process data
- = automatic data collection saves time and improves data integrity
- = ensures you get the most out of the equipment you have invested
- = in (i.e. not only do you have access to all the data, you can analyze its meaning)

Complete User Configurability

- = rapid implementation & ROI
- = flexibility, tailored to you organization no need for programming
- = low total cost of ownership, no expensive on-going consultant costs
- = system can be built and adapted over time or as your business changes

International Customer Base

We have many years of practical experience – listening to; understanding and managing customer requirements - to ensure delivery of cost effective applications that exceed expectations. Particular specialization can be found in Pulp & Paper, Food & Drink, Packaging, Plastics and Textiles. But this list is not restrictive.

Installations, which range from specialist manufacturers through to global corporations (including enterprise / multi-site agreements) have been successfully implemented in companies across the world. They include:



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