

How to drive profitability in uncertain times

How advanced analytics can
help your business to become
a quality-connected enterprise



Decide to be right
Every decision, every time



Chapter 1

Quality: why it can't be a tick box activity

Chapter 2

Analysing perceptual quality: tapping into the minds of would-be consumers

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What are your products trying to tell you?

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Drive the quality of every manufacturing process

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Why quality-connected enterprises are the future



Quality: why it can't be a tick box activity

The importance of an end-to-end approach

No one can predict the economic impacts of the dramatic political changes we're experiencing. Yet there is one proven way to sustain and extend profitability, whatever the economy: quality.

However, in today's hyper competitive, highly risk-averse manufacturing environment, simply having a few pockets of quality excellence is not enough. [Driving quality through every manufacturing process](#) will take you from 'quality as a differentiator' to quality as an undeniable competitive advantage - impacting everything from reducing production waste to precision marketing that drives brand advocacy.

How can you gather the insights you need in order to become this kind of 'quality-connected' enterprise? Research and real-world examples show that the answer lies in big data and advanced analytics.

The kind that will uncover unexpected relationships in your data and competitive advantages that can be incorporated back into your process to further drive quality throughout your business.

From manufacturing performance to in-field service information, big data analytics and the Internet of Things (IoT), hold the key to becoming the quality-connected enterprise and growing profitability in hugely uncertain times.

[Using examples from within the SAS customer ecosystem, let's look at how important a role quality is now playing in driving revenues and brand loyalty.](#)

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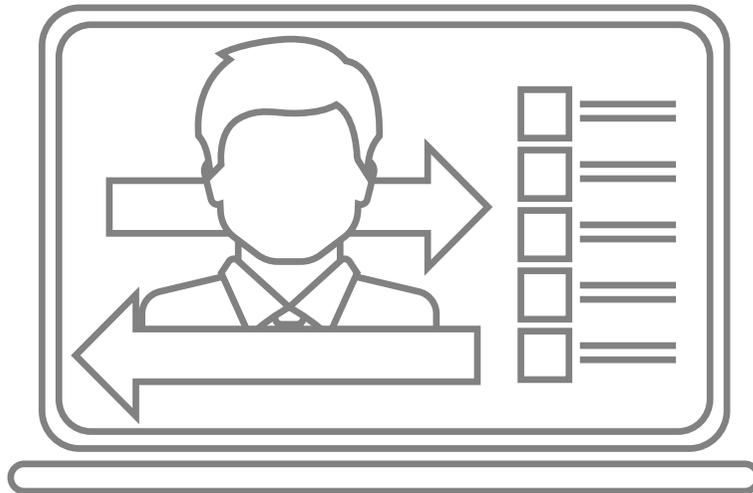
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Tapping into the minds of would-be consumers

How perceptual quality can get the right product to market, first time



Getting new products out to market successfully and cost-effectively has never been more critical.

While you will never be able to achieve 100% alignment of new product or innovation adoption to a specific demographic or market, with SAS you can achieve double digit improvements. This increases your response times and agility based on consumer feedback and has a huge impact on the success and profitability of each launch.

Why is 'voice of the customer' important?

Usually, the only way to gain insight is through market research and sales data. Yet that insight only comes once a product is on the shelves. At that point the window to make improvements is typically some six to nine months, with a great deal of cost and risk attached. By the time new iterations can be delivered, the market could have moved on - and your competitors may well have stolen the advantage.

How does it work?

SAS drives the quality of new product releases by allowing you to measure the perceptual quality of your up coming assets through deep Contextual Analytics. Largely this is based on being able to collect and convert sentiments from social media channels with open text. This is converted into data that can be combined with more structured product, sales, market (price and promotion) and research data. By using several different types of analytical techniques SAS can look at many millions of comments and responses to identify quality issues and assess perceptions by sub sections of core audiences. In short, using social media helps manufacturers to understand the feelings of potential customers and their propensity to buy - and even to negatively influence. Specific issues with a product's features or functionality can then be addressed far more quickly than in the traditional scenario - cutting costs, protecting revenues and driving brand engagement.

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In the real world

When Lenovo launched a new PC they used SAS Advanced Analytics to monitor reactions to the product on social media. Having the capability to assess perceptual quality in near-real time helped Lenovo to uncover a flaw in the product that was alienating a key customer segment. Taking on board those complaints - so significant they could have resulted in big financial losses and customer dissatisfaction - allowed the computing firm to accelerate speed-to-insight, responding to the issue in just 6 weeks. [This equates to a more than 50% faster issue detection rate.](#) It resulted in the manufacturer being able to protect future sales and to demonstrate that theirs is a brand wholeheartedly dedicated to customer satisfaction.

What's different about our approach is that we use deep textual analytics, we create real-time feedback loops to accelerate the product improvement process.

Benefits include



Uncovering hidden customer sentiment and improvement opportunities



Feedback loops to produce improvements

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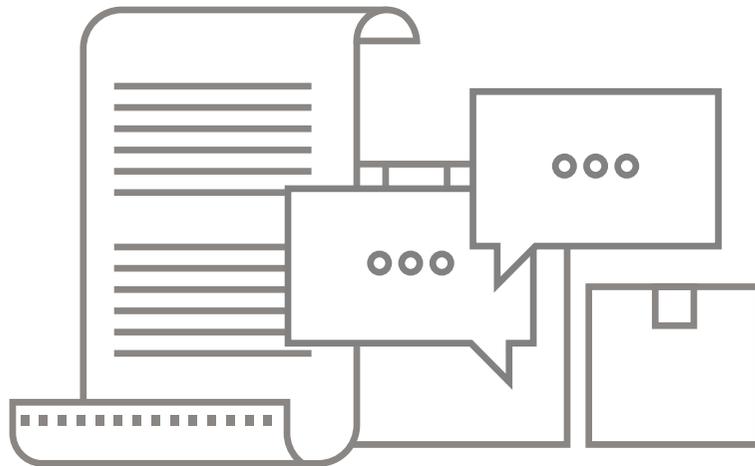
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What are your products trying to tell you?

Transform proactive warranty management into your best customer loyalty tool



A wide-scale recall of your products is as damaging to your brand as it is to your bottom line. You only have to think about the detrimental effects Toyota, Bosch, Hotpoint and Samsung have suffered. Such situations can be catastrophic for manufacturers - dealing with warranties and insurance claims, not to mention the negative impact on customer trust and share value.

Why is 'voice of the product' important?

In the age of the Internet of Things (IoT), it is far easier to listen to your products when they are in the field, mitigating the risk of situations like the above occurring. And by listening, we mean recording warranty issues, establishing common meanings, analysing them to detect root causes, and being able to predict likely technical issues by end product.

How does it work?

SAS® Field Quality Analytics uses advanced analytics to detect emerging in-field quality issues faster, pinpoint their causes and shorten detection-to-correction times. It's because the solution allows you to bring together customer, field performance, product, manufacturing and geographic data that your view of quality will be so much richer. Conveniently, this also allows you to get proactive about post-sales support and customer relations. Once an issue has been detected, we can apply predictive analytics to identify the broader problem (if there is one) so that you can address it before it impacts your bottom line - as we've seen it can.

With advances in technology empowering IoT to thrive, it will be easier to listen to what your products are telling you, streaming data and embedding analytics further into your proactive maintenance and customer service management activities. Not only will this transform relationships and quality, insights will be integrated quickly into product evolution and innovation processes.

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In the real world

Since luxury refrigerator manufacturer, Sub-Zero, began using SAS Field Quality Analytics it has reduced service incident rates by a staggering 50% in just 5 years. This feat has helped it to become the perennial leader in customer service in its segment. It will soon leverage the power of IoT, enabling the firm to monitor warranty issues in real time to tackle better technical issues in its product development process.

In summary, Sub-Zero's SAS capability has helped them to reduce the cost of quality, improve their brand image and drive customer satisfaction.

Benefits include



Reduced cost of quality



Enhanced brand image



Customer satisfaction driving market share



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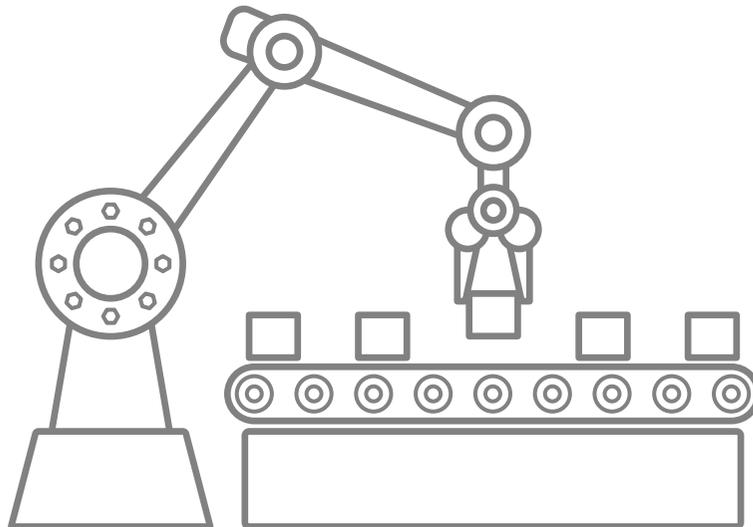
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Drive the quality of every manufacturing process

Lift productivity and asset utilisation while reducing costs



In the hyper competitive manufacturing space, every drop of productivity matters and sweating each asset and process can make all the difference to your bottom line. Embedding quality into your products begins with ensuring your manufacturing processes are best practice. The only way to stay on top of this is to take the following steps:

1. Continually monitor processes.
2. Collate the big data generated (even in a Hadoop framework).
3. Analyse the multiple types of data they output.
4. Feed those insights back into relevant processes so that quality is continually optimised.

Why is 'voice of process' important?

Because only with total visibility of every process from supplier input to product output - and acceptance in the field - can you ensure that the quality of your processes is unmatched. Interestingly, with the SAS approach, it's possible to transform the quality of every process within your manufacturing plant without re-engineering the way your business works or having periods of downtime. This not only makes change rapid, it also delivers these benefits:

- Improves production yields by making more efficient use of manufacturing assets.
- Reduces the risk of your components causing the failure of a final product.
- Lower product return rates and therefore costs and losses.

How does it work?

At SAS, we use many advanced analytical techniques. This ensures you get better answers to your business challenges. In particular, you'll gain true visibility of your operations and implement tighter process controls so that quality doesn't become a customer issue.

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Western Digital is one of the world's largest hard disk drive suppliers and a pioneer in hard disk drive storage manufacturing. The company's ability to succeed despite competition from new players is due in part to its commitment to quality. A failure rate of even a fraction of a percentage results in the production of a million defective drives. Consequently, minimising customer losses is critical to its operations, and the company's priority has been reducing the distribution of such defective units.

With SAS, Western Digital can make quality improvements driven by complete product and component traceability. And they can do it across the entire lifecycle of every unit of hard disk drive manufactured, from suppliers to manufacturing, to testing, shipment and customer use. The firm can predict yield excursions and reduce losses caused by making defective devices. The result? Improved customer trust, loyalty and a healthier bottom line.

Benefits include



Improve production yields



Reduce production waste



First-time insights



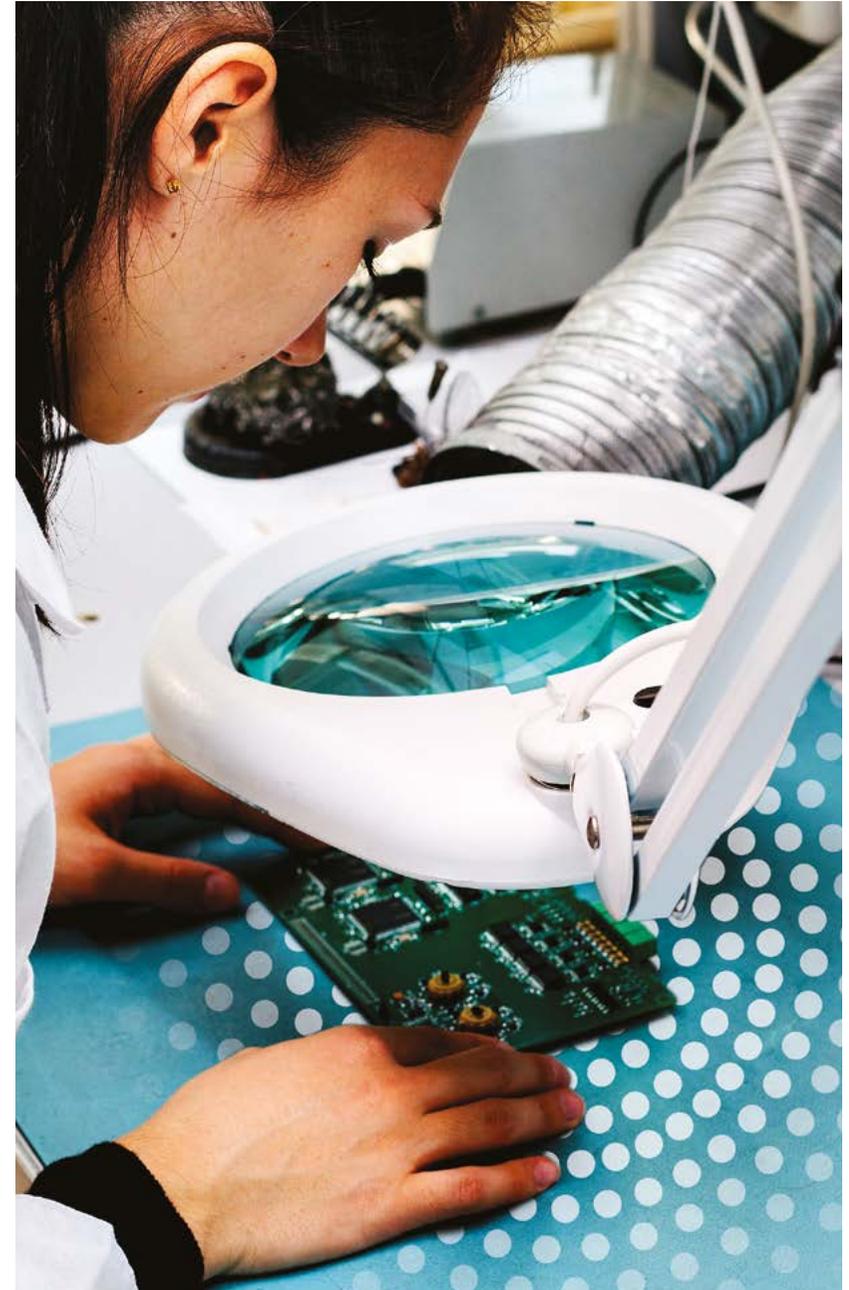
Asset productivity



Quick root cause analysis



Asset sweating/
Return on Capital Employed (ROCE)



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In summary

Why quality-connected enterprises are the future

Manufacturers have always faced deep peaks and troughs in demand - and navigating towards future profitability has never been more challenging.

Putting quality at the core of your proposition is the answer. Yet quality means something different now - it has to be built in to every single process, and those processes must be interconnected, data analysed in sophisticated ways that uncover new truths about performance, efficiency, costs and customers' propensity to buy.

In this way, rather than quality residing in isolated centres of excellence, it runs throughout the manufacturing lifecycle and into the field. The intelligence you can begin to gather with an IoT strategy will strengthen your competitive advantage - delivering new sources of 'always-on' data. The best way to manage this big and complex data is with a partner such as SAS.

Why? Because our solutions combine 3 essential components:

1. A sophisticated data management engine.
2. Advanced, real-time analytics of many types for many different business challenges.
3. Smart experts who leverage our 40 years experience in the field of analytics working with some of the world's most successful manufacturing brands.

Our position as the only leader in this field is independently verified by Forrester in the Forrester Wave™: Enterprise Insight Platform Suites, Q4 2016.

Don't reinvent the wheel!

Analytics are becoming more embedded in our everyday lives as technology and innovation flood the consumer and business markets. What analytics actually means is becoming more and more subjective. SAS takes the simplest approach to the most complicated processes and problems. We can scale those techniques up to address even the biggest challenge, yet support the lowest entry point to well established analytical practices to keep adding value throughout the cycle.



Find out more

Visit sas.com/uk/quality to book a call from one of our Manufacturing experts.