

BEYOND PERFECTION AND 'FIRE FIGHTING'

Why we need a new understanding of quality

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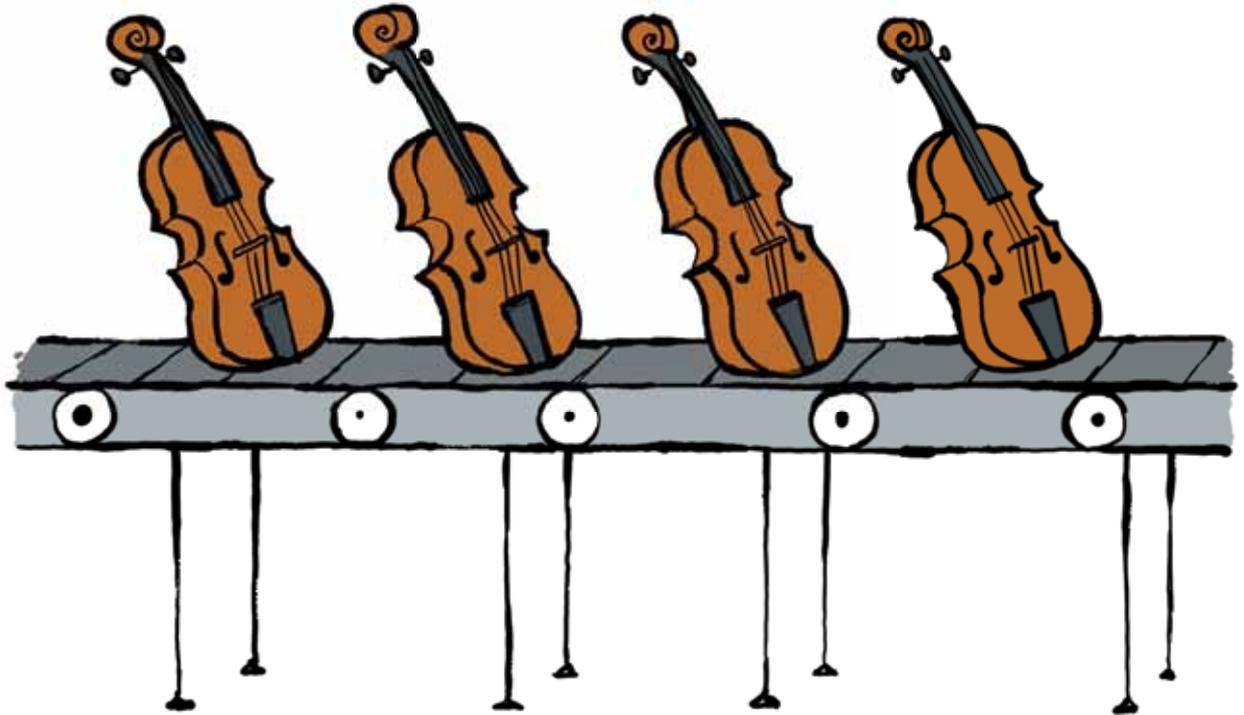
The legend was born 450 years ago on the Piazza San Domenico in Cremona in Northern Italy. It was here, among magnificent Lombard buildings in the shadow of Padua and Milan, that Antonio Stradivari is said to have produced his best and most famous violins, violas, and cellos. Instruments that have over the centuries been loved, adored, treasured and, in rare cases, sold for millions. Instruments that are unrivaled in their beauty and tone and whose perfection has never been equaled. Many people still say that it was not just human hands that were at work in forming them. Stradivari's instruments are the quintessence of human creation – the highest, ultimate quality.

Or to be more precise: they were, because people have been dismantling the legend for a number of years. One of the first and immediately highly visible attacks came from Germany of all places. "Print me a Stradivarius" was the heading above the cover picture of the British magazine

'Economist' depicting a violin produced from an unremarkable gray material at the beginning of 2011. The violin maker was the Munich-based company EOS, one of the pioneers in 3D printing. The spectacular precision of the new technology – the article message ran – would change

the world in a few short years and make it possible to produce quality for a fraction of the cost of a masterpiece of craftsmanship. At the end of 2011, the respected American science magazine PNAS tested the sound of Stradivari against modern violins – which won the test hands-down. Exactly 400 years after Stradivari produced his famous violin 'Lady Inchiquin'. The test leader noted that the power of the legend was so great that in all the centuries nobody had even dared think of testing the quality under scientific conditions. It is not known whether he had read the 'Economist' a few months earlier.





'Zero Defects' as the Brand Core

Even today, quality is more than the sum of matter-of-fact indicators and readings. It forms the core of most globally successful brands in German-speaking countries in particular, providing the central dimension for positioning and the basis for a price strategy that is intended to ensure the survival of high-wage economies in global competition. 'Zero defects' has become a standard concept over the last few years that for most companies is non-negotiable. The art of engineering – in the self-conception of its followers it still has a great deal in common with the master workshop in Cremona.

For decades it was success that justified a strategy of uncompromising quality and the pursuit of perfection. In the same way that Stradivari was right for 400 years. However, securing and maintaining quality is becoming an increasingly uncertain task for which there are a number of reasons.



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Quality under Pressure

The life cycle of most products is growing ever shorter at a dramatic rate – bringing far-reaching change to B2B as well as B2C markets.

Development, industrialization and production must therefore be performed under enormous pressure of time, restricting the scope for quality optimization. At the same time, complexity has also been growing – not least as a result of physical and digital components and systems. The development is leading to a rapid increase in the costs of quality – through inadequate advance quality planning, higher expenses for testing and follow-on costs for quality defects. Accordingly, more than three-quarters of a million vehicles in Germany were subject to a workshop recall last year. We therefore urgently need methods that

ensure a lower susceptibility to faults and defects in the subsequent product. One approach here, for example, is provided by the concept of 'robust design', which aims to analyze and control the effects of factors such as material properties, process parameters, environmental influence and deviations in product design. In addition, it is also important to understand the interactions of these factors and even to exploit them in reducing costs.

Quality Management as a Core Function

What is more, the conventional predominant understanding of quality is up for discussion. Nowadays quality is generally registered along two dimensions. First, it is the dominant secondary constraint in any production system, if not its

"The principle of 'faster and cheaper' is no longer sufficient when designing a global network."

meta goal. Second, quality above all means fire fighting, too. Quality management is deployed as a function when standard requirements are not met or when things are literally burning. Far-sighted and methodologically grounded coordination of the various systems, processes and teams within the company

is the exception here. However, it is becoming increasingly apparent that a significant reduction in costs and defects will only be possible if a quality management system can – at every step of the value creation process – prevent faulty products from being planned, developed and, either internally or externally, passed on to customers. Viewed in this way, quality is predominantly a corporate function and a management principle that is built on operational excellence and a broad mix of standardized tools and methods.

How much Quality is Necessary?

The question also arises as to how much quality is actually required and where. Global companies in particular are confronted in different markets by differing expectations regarding quality and compulsory quality standards as well as by different trade-offs between quality and price. These must be taken into account primarily in the localization of products as well as in the development and positioning of sub-brands and service models. The key question here is which quality attributes are really non-negotiable and which can be overlooked

in favor of what is for the customer an appropriate price relationship. By the way, this does not just apply to markets in Asia, Africa or South America. Overengineering – i.e. perfection that is not matched by a perception of higher value on the part of the customer – no longer provides an appropriate return in Western European markets, either, as the demise of many traditional brands demonstrates.

The Courage to Risk the Beta-version

And finally, recent years have also seen a change in the relationship between quality and innovation. Today it is more important in many industries to bring innovative products to market and to the customer early than to hone the last detail for the sake of quality and perfection. Approaches such as 'Open Innovation', 'Crowd R&D' or 'Crowd Testing' are already reality today. They count on the willingness of customers to participate in the development and testing processes and in this way to continuously optimize the quality of products – and are seeing growing success. Admittedly, every one of us would prefer a violin from Stradivari's workshop than a fiddle printed using polymers. The question, however, is whether we would also do so for the price of our own survival.

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