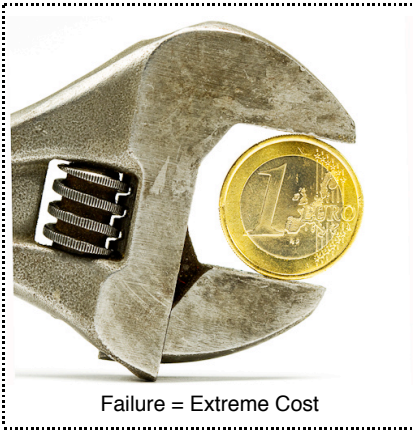


# (Reliability &) Cost of Failure



## **Immeasurable Failure Cost**

People talk about 'cost of quality'; we believe that this misses the point. Often the Cost of Failure is so absolute and extreme that expenditure on Quality and Reliability is insignificant. Yet, sadly, many focus on the cost of components / processes etc. because they can measure them.



## **Failure to Spend £100 Cost an Entire Business**

Our client made a major assembly for innovative handheld data acquisition terminals used in point-of-sale applications (made by B). Azteck were engaged to discover why the PoS terminals were failing. We discovered that the problem was incorrect stripping of the insulation from wires near the PCB. The conductors were being nicked and were breaking.

Proper use of the correct wire strippers would have cost <£100; a high-end automatic machine would have cost £5,000. Yet, our client settled out of Court for £100,000 (they got off lightly) and B's reputation in the market was destroyed. B could have become the world-leading supplier of handheld data acquisition units.

We have many examples from business and private life. Consider the Space Shuttle: the cost of a seal redesign / postponing launch

vs the management culture in NASA and Morton Thiokol – for a dramatic example.

## **'Quality' is a Misnomer**

The word Quality is often misunderstood. In Manufacturing, 'Quality' means Consistency.

Companies have mission statements aspiring to excite their customers. Our ambition for manufacturing is to bore the customers: "They do not feature on our radar – we place an order and it arrives – the same perfect product, on time, every time."

Consistency is key. Once one has achieved consistency, one can develop the product or process in any direction.

## **Assuring Quality vs Inspecting-In Quality**

Old fashioned 'inspection based' quality relied on filtering out the faults. In essence, production and suppliers (sub-consciously or otherwise) tried to get sub-standard product past inspection. Be careful not to be tempted.

*"It is practically impossible to impose high quality on a sub-contractor or supplier who is not used to supplying your market."*

Quality Assurance will often do away with inspection. The manufacturing process and business systems assure that the product / service will be consistent.

It costs much more to 'inspect in quality' than to assure quality in the first place.

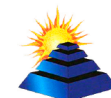
## **Continuous Improvement is King**

Once one can make the same product (or mistake) every time, one can move forward. Continuous Improvement, following the Shewhart Cycle (aka Deming's Wheel) is an astonishing and simple process if correctly applied. A 'no-blame culture' is essential.

A new buzzword / technique is in vogue every year. CI is at the very foundations of the best.

Lean Manufacturing / Lean Enterprise builds CI into a technique of focussing on aspects that serve the customer – very powerful.

**Business Process Simplification**  
for  
**Businesses with Ambitions**



**Azteck**

Amazon Barn, Manor Farm  
Elkstone, nr Cheltenham, GL53 9PD  
phone 01242 870556. [www.azteck.com](http://www.azteck.com)

# (Reliability &) Cost of Failure



## System Design to Avoid Failure

Products and Processes can be designed to make mistakes impossible. For instance: One cannot put leaded petrol in an unleaded car as the nozzle is too large.

## Key Ingredients to Quality and Reliability

Briefly:

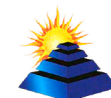
- Δ Culture ... at all levels. (unashamedly first)
- Δ Knowledge, experience, training.
- Δ No Blame Culture (one can not improve if the emphasis is on blame)
  
- Δ Appropriate Suppliers (who are in control and controlled; certificated and audited)
- Δ Working closely with Suppliers & Customers.
- Δ Controlled Product and Component Specifications.
  
- Δ Continuous Improvement.
- Δ Appropriate and Reliable Equipment and Processes.
- Δ Zero Tolerance to defects / failures.



The Triumphs of modern Car Production are not an Accident

BMW Hams Hall Engine Production, Warwickshire

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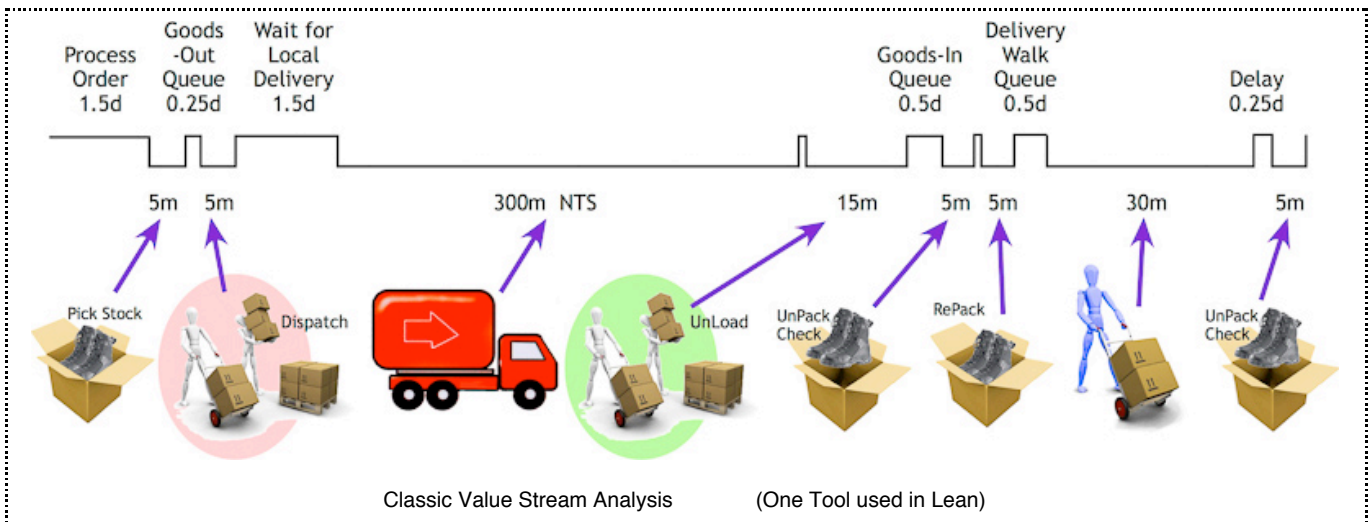


## **Azteck's Expertise**

Azteck has experience of Quality Systems in a wide range of industries; both manufacturing and service providers. We worked on quality in the early days and created the first 'paperless' system to be audited by Lloyds.

Our specialist interests are in 'keeping it simple', integrating quality with the mainstream business processes and remaining grounded.

*"Controlled written procedures were evident throughout ... Simple but effective the procedures were even translated into various languages to ensure understanding. Clear unambiguous ... standards now ensure accept / reject criteria..."* Tesco - Norman Bruce, Senior Technical Manager



## **Benefits**

- Δ Key customer approval:  
Tesco - "Fantastic"  
Boots - "Among the best we have seen".
- Δ Process Stability, Analysis & Reporting lead to increased yield from 70% to over 80%.
- Δ Reducing Rejects by a factor of 4 (24% to 3%).
- Δ Simple and Paperless.
- Δ ISO9000 accreditation without a single non-compliance.
- Δ Pictorial Interface supports 34 ethnic groups.

## **As EBP's MD put it:**

*"Nic took us to cutting edge quality and communications in a single bound: fast, cost effective, universally embraced. The approach minimises data entry and form filling by being fully integrated with operations – natural activities for operations automatically create quality system records. We broke through excellence targets and EBP came of age when we asked Nic for advice. The dynamic energy of EBP flows through arteries created by Azteck."*

Aleem Hosein, Managing Director, Environmental Business Products Ltd.

We gratefully acknowledge our client's assistance in preparing this article.

Call us to discuss Product and Business Process Reliability.

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